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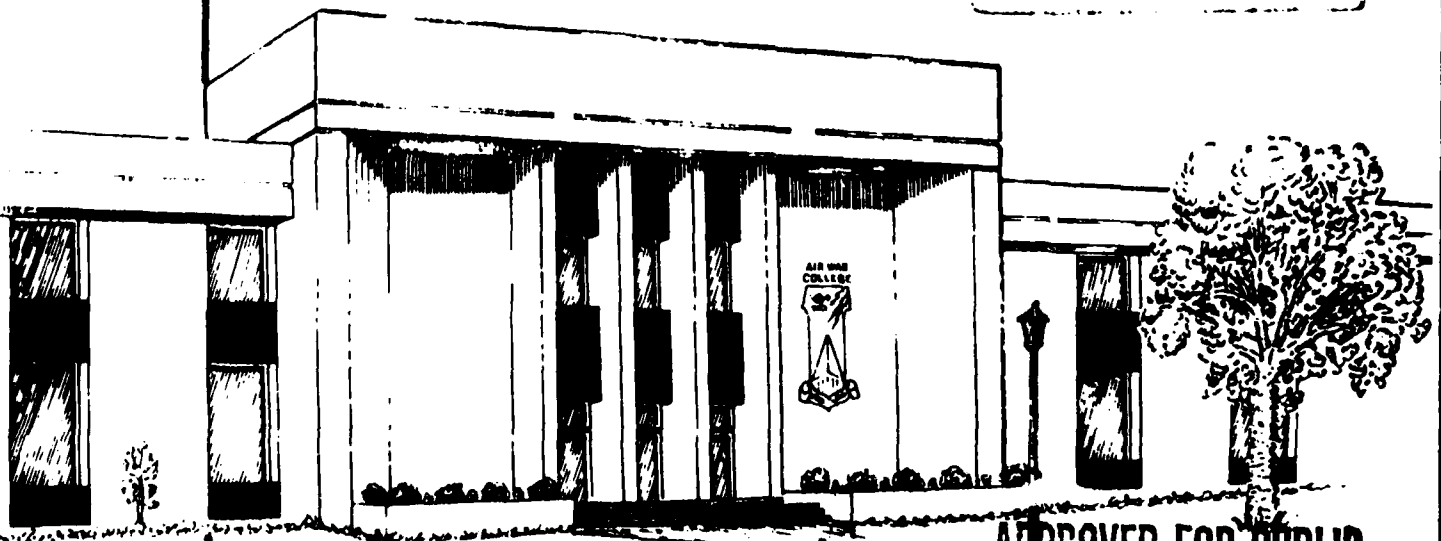
LOGISTICS: THE SOVIETS' NEMESIS TO
CONVENTIONAL WAR IN CENTRAL EUROPE?

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LOGISTICS: THE SOVIETS' NEMESIS TO
CONVENTIONAL WAR IN CENTRAL EUROPE?

by

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A DEFENSE ANALYTICAL STUDY SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE CURRICULUM
REQUIREMENT

Advisor: LTC Joe Stroud

MAXWELL AIR FORCE BASE, ALABAMA

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EXECUTIVE SUMMARY

TITLE: Logistics: The Soviet's Nemesis to Conventional War in Central Europe?

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During recent years, the Soviet Union's military writers have increasingly expressed the view that conventional war, as opposed to nuclear war, is now possible in Central Europe. While the Soviets have fielded a formidable array of weapon systems, as the result of annually executing a defense budget which approximates 14-20 percent of the gross national product (GNP), and have maintained an active force of nearly two million soldiers, the question arises as to whether or not they have developed a logistics capability which is capable of sustaining combined arms operations in a conventional war scenario in Central Europe.

In order to answer this question, this analysis draws on historical examples and evolving logistical support infrastructures and principles of Soviet operations in World War II and Afghanistan. The study focuses on the structure, doctrine, and procedures at the national, front, army, division, regiment, battalion, and company levels by determining existing methodology for sustainment and provides conclusions as to strengths and weaknesses of Soviet logistical capabilities to sustain maneuver warfare. JX



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BIOGRAPHICAL SKETCH

Lieutenant Colonel (P) Gilbert H. Edmondson was commissioned as a lieutenant in the Army's Ordnance Corps in 1967. Since being commissioned, he has served in a number of logistical staff and command positions at the company, activity, battalion, brigade, and division levels. He served with the 2nd Support Command (Corps) in Germany from 1986 to 1988 where he commanded the 1st Maintenance Battalion. He is a graduate of Auburn University, the Florida Institute of Technology, and the Army Command and General Staff College. Lieutenant Colonel Edmondson is a graduate of the Air War College, class of 1989.

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CHAPTER I

INTRODUCTION

Today, perhaps more than any other time, the Soviet Union presents a new and dynamic challenge to the United States and our allies within the North Atlantic Treaty Organization (NATO). Mikhail Gorbachev, General Secretary of the Soviet Union, is a bold economic reformer who speaks of glasnost, perestroika, and uncharacteristic reductions in both troops and arms. While most of his talk has been provocative with little materialization to date, he certainly is proving adept at keeping the United States and our European allies off balance. His most recent proposal to reduce forces by 500,000 troops, 8,000 pieces of artillery, 10,000 tanks, and approximately 800 aircraft has left defense planners with the task of having to evaluate what the proposals actually mean in terms of a reduced threat to Western Europe.

Beyond any doubt the Soviet Union has remained as the principal threat to the United States on a global perspective. And within Europe, World War II was hardly terminated before the USSR emerged as a formidable threat on that continent. Their expansionistic and opportunistic tendencies, coupled with their communistic ideology, have firmly engrained and reenforced the threat perception during the post-World War II years. The Soviets achieved a

nuclear capability in the early 1960s, and they achieved strategic military parity with the United States during the 1970s. (17:42) Up until the mid-1960s, Soviet military writers frequently wrote of the employment of nuclear weapons on future battlefields, and there was mutual consensus that any use of nuclear weapons would rapidly progress through retaliatory stages until total devastation was achieved by both sides. (11:52) During more recent years, nuclear weapons have been discussed infrequently by Soviet writers, and the void has been filled by writings addressing accurate, high-explosive, conventional weapons. (8:74) Publications addressing a conventional war in a European scenario have also increased notably. Research further indicates that there has been a generally prevailing feeling among the Soviets for several years that they could fight and win a conventional war in Western Europe. (11:57) Equally important is their perception that a conventional war, as opposed to a nuclear war, is, in fact, possible. With the array of new weapon system introductions over the past years, the unparalleled annual defense expenditures (approximately 14-20 percent of the gross national product), and the large number of active forces maintained, one can easily understand why the Soviet Union may feel that it could fight and win an extended conventional war in Western Europe. (3:1002)

As a logistician of some 21 years, I have acquired

an in-depth understanding and an intuitive feeling of the complexities of war, especially from the standpoint of the adverse impact that logistics has on the outcome of battles and wars if not properly executed. Given my background, the Soviets' apparent trend away from the employment of nuclear weapons, and the pragmatism and dynamics of the time, I decided to complete my Defense Analytical Study requirement at the Air War College by making an in-depth examination of the Soviet logistics system.

Soviet logistics has been of considerable interest to me for some time; however, I have had little opportunity to perform any detailed study in this arena. During various courses such as my Advanced Course, the Command and General Staff College, and various war games, the primary attention in all cases was always directed toward such tactics as taking a hill, positioning of tank-killing weapons, etc. Soviet logistics received little if any attention, and in my opinion this is one of the contributing fallacies that always made the Soviets appear taller than they actually are. Limited fuel and ammunition shortages have a tendency to humble even the most offensive-minded tacticians. Accordingly, it is my intent to provide an unclassified document which the logistician, or interested combat or combat support soldier, can read and gain a better understanding of Soviet logistics. Specifically, I will analyze the Soviet's capabilities for logistically sus-

taining combined arms operations in a conventional war scenario in Central Europe. To accomplish the analysis, I will draw on historical examples and evolving logistical support infrastructures and principles of Soviet operations in World War II and Afghanistan. The study will focus on the structure, doctrine, and procedures at the national, front, army, division, regiment, battalion, and company levels by determining existing methodology for sustainment and will provide conclusions as to strengths and weaknesses of Soviet logistical capabilities to sustain maneuver warfare.

Accepting the fact that time is a restricting factor to the research effort while concurrently desiring to produce a meaningful document of significant value, I have taken several actions to further limit the scope of the research. First, and while the broadness of logistical functions may vary between different people or different services, I will limit this study to the functions of supply, transportation, maintenance, and medical support operations. Second, it would be impractical to attempt to cover the entire breath of logistics within the Soviet's five services; consequently, I will concentrate my effort toward the ground forces. Specifically, I will direct particular attention toward tank troops and motorized rifle troops, which are two of the three combat branches that compose the ground troops. The third branch, rocket

troops and artillery, will not be covered in detail.

Third, I have limited the scope of the study to unclassified material so that it will be available to a wider leadership audience. I remain thoroughly convinced that there is a significant amount of unclassified material which is available to support production of a completely credible document which will be of significant value to others who may have similar interests in Soviet logistics and the Western Europe scenario.

CHAPTER II
DEVELOPMENT OF SOVIET LOGISTICS

World War II

To fully understand Soviet logistics, the significance that the Soviets place on logistics, and the profound role that Soviet logistics plays today in their military strategy, one must briefly examine the evolution of logistics from the period immediately following the Russian Civil War. The end of the Civil War is significant as a start point because various military reforms were introduced, including measures to enhance supply support in the Red Army. (14:229)

The tyl or rear services were formed during the Russian Civil War with the existing central supply directorates being reorganized during the same period. (14:228) The Main Artillery Directorate and the Main Military Engineering Directorate were formed in December 1917 and February 1918 respectively. (14:228) The Main Artillery Directorate was responsible for supplying units with artillery munitions and parts and the maintenance of artillery weapon systems. (23:45) The Main Military Engineering Directorate was responsible for the maintenance of engineer equipment and the supply of engineer-peculiar parts. (23:45) On 1 January 1918, the first evidence of the Soviet's propensity for centralization surfaced as all existing supply

directorates were combined into a single organization, the Central Directorate for Supply of the Red Army. (14:228) By 1920, the tyl was fully operational and providing support. (14:228) However, as the Civil War ended, numerous changes were sought to improve supply support and a new directorate was established and assigned the responsibility for providing materiel support to all military forces. (14:229) Under this system, which has basically continued to the present time, supplies from centralized warehouses are sent out to the military districts and from there to units and then on to troops. (14:228) During this period, the communist party firmly believed that preparing the rear services for the possibility of war was one of the state's most important responsibilities; a belief that was based on Lenin's premise that "a firmly organized rear is necessary for proper warfare." (23:44)

During the late 1930s, Stalin's purges resulted in thousands of military officers being killed. The rear services suffered considerably as a number of their officers were executed. (14:230) Positive actions were undertaken in support of the rear services in 1939 and 1940 when new schools for support and supply officers were established and a number of the existing military academies started courses for rear services specialists. (14:230) However, and in the long term, the purges of Stalin were to have a significant impact on rear services operations

for part of World War II.

On Sunday morning, 22 June 1941, the Germans launched Operation Barbarossa against the Russians, who would subsequently suffer inconceivable destruction and death at the hands of the Wehrmacht. Some 20 million Soviets would die during the course of this war, which the Soviets termed as the Great Patriotic War. From a Soviet perspective, the four years of this war can be divided into three phases. The first phase lasted from June 1941 to November 1942 and entailed the attempts to stop the German attack. (7:17) The second phase occurred from 19 November 1942 to the close of 1943 and concerned the Soviet's counter-offensive actions. (7:17) The third stage lasted from the beginning of 1944 up to May 1945 when victory was achieved. (7:17) The stages of the war are not only important from a tactical standpoint but are equally important from a logistical perspective since support concepts and procedures often vary with the tactics, e.g., defensive, counter-defensive, and offensive.

With the start of the Great Patriotic War, there was a near-total collapse of the logistical system. (14:232) The Soviet supply system, while centralized within districts, was divided into 16 separate directorates which had no overall coordination or direction. (2:1) The war materials were located in warehouses in the various military districts, with the majority of these warehouses

being located in the border areas which were captured by Germans in the early days of the war. (14:231) There were separate chains of command for obtaining such things as weapons, special equipment, and ammunition. (2:1) Since the attack by the Germans was a surprise to the Soviets, there were no rear services units with the combat forces to provide support; the rear services units lacked sufficient motor transportation and other equipment; and there were significant shortages of such combat service support specialists as surgeons and fuel supply personnel. (23:68) Furthermore, the rapid movement of the Germans forward and the withdrawal of the Soviets back across the rear services' proposed locations led to total confusion which was even more compounded by the lack of communication and a central control agency. (23:72) Still further, and due to its location, the majority of the Soviet's armaments industry was lost early to the Germans. (14:232) These failures within the logistical support system led to a reorganization on 28 July 1941, a little more than a month after Operation Barbarossa was initiated.

With the reorganization on 28 July 1941, Stalin approved the statute on control of the rear services in wartime and the organizational structure of the control agencies of the rear services. As established, the Soviet Army Rear Services Directorate was headed by the Chief of Rear Services and consisted of: Headquarters of the Chief

of Rear Services, Soviet Army Military Communications Directorate, Soviet Army Directorate of Motor Roads, Main Intendance Directorate, Fuel Supply Directorate, Medical Directorate, and the Veterinary Directorate. (23:73) The functions of these directorates are briefly described below.

(1) Communications Directorate--Responsible for planning and organizing the movement of supplies by rail, road, ship, and aircraft. (23:237)

(2) Directorate of Motor Roads--Responsible for constructing and maintaining roads and bridges for motor vehicles. (23:249)

(3) Main Intendance Directorate--Responsible for supplying units and soldiers with common items of equipment. (23:230)

(4) Fuel Supply Directorate--Responsible for supplying units with petroleum, oil, and lubricants. (23:230)

(5) Medical Directorate--Responsible for medical support and supply operations. (23:237)

(6) Veterinary Directorate--Responsible for military veterinary medicine and disease control. (23:237)

Not only did the rear services reorganization institute rear services control agencies into the Fronts and armies, but it also instituted rear services chiefs at all levels of the armed forces. (23:73) Prominent and competent officers were promptly appointed to all the rear services positions.

(14:232) The organizational changes, coupled with the addition of quality officers, provided a somewhat stable foundation upon which effective support could rapidly develop at a critical time of the war.

During the German offensive, the rear services worked under extreme hardships. As a result of the surprise attack, the rear services personnel were faced with the problem of supporting the mobilization efforts while concurrently providing support to combat operations. Large quantities of food, forage, clothing, medical supplies, and ammunition as well as engineer, signal, artillery, and transport equipment were urgently needed by the defensive forces which were rapidly being pushed backward toward the interior of the Soviet Union. The rear services personnel expended tremendous effort and personal sacrifice in ensuring that the materiel requirements of combat troops were met. However, many needed items of supply were not in the reserve stocks, or had been in the reserve warehouses and were captured by the Germans.

As the war transitioned into the counter-offensive phase, the rear services' mission changed markedly as large quantities of ammunition and fuel were required daily. The Western Front alone required approximately 10,000 tons of materiel daily, with ammunition and fuel comprising the vast majority of this tonage. (23:89) As the counter-offensive stage stabilized, the ammunition expenditure for

the three Fronts averaged 1,200 tons (60 rail cars) worth on a daily basis. (23:103) The poor road network and the destroyed railway lines severely restricted the movement of needed materiel. Where possible, the materiel, especially ammunition, was shipped directly to the armies and divisions bypassing the supply depots of the Fronts. (23:89) While aviation assets were limited, airplanes were used in some cases to deliver ammunition during the counter-offensive stage, although they were most often used for this purpose in the offensive stage. (23:89) Animal-drawn transportation played a dominant role in the delivery of supplies during the counter-offensive phase.

During the counter-offensive stage, the Soviets initiated actions to establish an expanded training base for rear services officers. The Soviet Army Intendance Academy was organized as the Military Academy of Rear Services and Supply. (23:95) Training programs and courses were provided by the military academies and schools to meet the wartime needs of providing pertinent training to young officers in a short period of time. (23:95) Military medical academies and schools were also established for the purpose of training medical assistants. (23:95)

As the war transitioned from the counter-offensive phase to the offensive phase toward the end of 1943, the Soviet's industry, much of which had been relocated earlier to the interior of the country, was producing much of the

required materiel and the rear services were operating with increased proficiency. Supplies were pushed forward and consumed at an increasing rate as the availability improved. On a daily basis, the troops of two Fronts consumed an average of 4,000 tons of fuel, 4,400 tons of food, and 245 railcars of ammunition. (23:136) As the Soviet rate of advance continued at approximately 33 kilometers per day, the transportation problem continued to impact on the support of combat troops.

As the offensive action moved farther and farther away from the country's interior, delivery from the rear began to lag significantly as motor transport progressively became the only mode for moving the volume of supplies and materiel needed. (23:136) In the defensive and counter-offensive stages, motor transport, animal-drawn transport, and rail assets were used with rail transportation playing the most important role in supporting military shipments. However, rail transportation became increasingly difficult as Soviet troops moved into bordering countries where they experienced different track gauges, different dimensions of the rolling stock, different clearances for overhanging structures, and even different types of hitching devices and signals. (23:213) While transportation had remained a problem from the onset of the war, security problems surfaced for the first time during the offensive stage.

The defense of facilities in the rear and the

inherent requirement for organizing security presented a new requirement as the Soviet combat units moved onto foreign soil. (23:137) Thousands of Germans roamed throughout the rear performing acts of sabotage and causing disruptions to logistics activities. (23:137) To solve this problem, the Soviets formed six rear security divisions to protect logistics operations, and they took action to improve the combat and survivability skills of rear services troops. (23:137)

There is no doubt that the Soviet rear services played an unparalleled role in the Great Patriotic War; rear services personnel were the most decorated soldiers in the war. Accounts of the war indicate that:

(1) Rear services delivered millions of weapons and other pieces of combat equipment, more than 10 million tons of ammunition, approximately 16.4 million tons of fuel, and immeasurable amounts of other materiel.

(2) Motor vehicles transported 145 million tons of supplies.

(3) Rail transportation exceeded 19 million cars--some 300 million tons of freight.

(4) Road services built and restored approximately 100,000 kilometers of road.

(5) Rear services built over 6,000 airfields.

(6) Railroad troops performed troop and supply movements, provided for their own defense, and restored

117,800 kilometers of railway lines and approximately 15,000 bridges.

(7) Workers of medical service units returned more than 70 percent of the wounded and 91 percent of the sick back to duty status. (23:6)

Throughout the war the Soviets had continued to make adjustments within the infrastructure of rear services and to the personnel serving in the various positions in order to establish the best possible support base. As the war ended, the Chief of the Rear Services was responsible for finance, medicine, fuel supply, military communications, food supply, clothing supply, military veterinary medicine, automotive transport, procurement of quarters, and the main administration of trade. (14:236) One of the most significant changes during the course of the war was the removal of the rear services from under the general staff to being directly responsible to the ministry of defense. This restructuring not only reflected the centralized nature of the Soviet armed forces, but it also vividly reflects the Soviet's view of the importance of rear services operations. (14:235)

Numerous Soviet military writings point out that much was learned during the Great Patriotic War. (21:72) The lessons learned during the offensive phase of the war were particularly invaluable to educating postwar logistics planners. (21:72) In fact, many of these lessons are still

applicable today. (21:72) As the war ended in May 1945, the Soviets desired to build a force which had increased mobility and firepower and one which was capable of achieving a higher rate of advance. (15:23) To complement this desired combat force structure, changes were also needed in the structure of the rear services. During the postwar period, the principles that drove the concepts and force structure of rear services were the:

(1) Need to increase the mobility of rear services, especially as it involved ammunition and fuel supply and maintenance services; (15:23)

(2) Requirement to establish effective rear services control activities; (21:72)

(3) Requirement to consolidate and centralize rear services assets where practical and beneficial; (21:72)

(4) Need to increase the depth of logistics throughout the support structure so that transitioning to war would be more easily effected; (23:467) and

(5) Need to develop concepts, procedures, and measures to ensure the survivability of rear services personnel, units, and activities. (21:72)

Afghanistan

In December 1979, the Soviet Union attacked Afghanistan, a country of 20 million people and one of the poorest countries in the world. Prior to the invasion, extensive plans had been formulated concerning all aspects of

the operation. In November 1979, bridging material was positioned along the river between the two countries, and designated forces were put on alert. (12:6) Airborne troops entered Afghanistan first. These troops landed at Kabul International Airport, the military air base at Bagram, the Salang Pass, and at other critical points around the country to include communication facilities and population centers. (20:1) Following the airborne insertions, three or four Soviet motorized rifle divisions moved into Afghanistan along two roads. These two paved roads, the highway from Termez via the Salang Pass to Kabul and the highway from Kuska over Herat to Kandahar, were built by the Soviets in the 1960s and were highly supportive of the attack. Once inside Afghanistan the motorized rifle units established garrisons in the areas of concentrated populations. Within only a few days, the Soviets gained total control of the military bases, airports, towns, and the road network. Within a few weeks of the invasion, the Soviets became acutely aware of the difficulties associated with supplying a force that was rapidly increasing to over 100,000 troops. (20:2)

The Soviets experienced significant problems with the movement of supplies, equipment, and personnel. All movement operations from the Soviet Union and within Afghanistan itself had to be accomplished using either motor transport or air as there were no railroads in Afghanistan.

(20:2) The Soviet's principal main supply route ran from railheads near Termez on the Soviet border, through the Salang Pass, and then on to Kabul. (20:2) This route, which was 450 kilometers long and entailed an average of two weeks travel time for convoys, had numerous curves and steep grades, and the route was often covered with either dust or snow, depending on the season of the year. (20:2) Further, the Mujahedeen guerrillas quickly learned of the Soviet's weakness for protecting their extended lines of communication (LOC).

The interdiction efforts of the guerrillas in the early years of the occupation were quite successful in constraining the overall logistics support effort. The guerrillas repeatedly used ambushes, mines, and demolitions to impede the movement or to destroy convoys which had little security. Significant quantities of weapons and supplies were captured for subsequent use by the guerrillas. The problem was so severe that considerable attention of the Soviet commanders and staffs was consistently directed toward protecting LOCs, supply facilities, and convoy movements. New concepts and procedures for resupply operations evolved as a result of the logistical constraints which were achieved by successful guerrilla operations.

To provide the requisite security for bridges, tunnels, supply facilities, and important points along the LOCs, the Soviets drew from their World War II experience

as they developed and established a series of fixed and fortified security posts and garrisons from which assigned line units and special security forces performed route reconnaissance, traffic control, convoy escort, and patrol operations. (20:3) To coordinate and integrate security actions, communication nets were established between these fixed security posts and garrisons and supporting helicopter and fixed wing assets, which not only provided "on-call" support, but routinely patrolled the supply columns during highway movement. (12:11)

The Soviets also developed what they termed as "movement support detachments" which were responsible for ensuring that convoys arrived safely at their destinations. These detachments, which included Soviet combat engineers as an integral part, conducted route reconnaissance, constructed route bypasses, and repaired small sections of damaged road. (20:4) The combat escorts were either motorized rifle, airborne, tank, or special operations forces which interspersed throughout the convoy. (20:4) With each convoy there was also a maintenance support element which had both repair and tow capabilities. (20:4) It was not uncommon for a convoy with its accompanying support detachments and maintenance element to be several hundred vehicles long. (20:4)

As part of the overall effort to enhance logistics movement operations, the Soviets instituted a program

whereby there was increased training for rear services personnel. During the early period of the war, the motor transport drivers were either mobilized reserves or conscripts--both lacked the requisite skills and performed poorly. (20:2) As the war continued, the Soviet training base began to produce motor transport personnel who were qualified in firing automatic weapons, truck-mounted anti-aircraft guns, and rocket propelled grenade launchers. (20:5) As a result, the motor transport personnel began to play an integral part in the defensive operations of convoys.

To reduce the reliance on motor transport, aircraft and pipeline assets were used increasingly more extensively as the guerrilla threat maintained its viability. The An-12 and An-22 aircraft of the Military Transport Aviation (VTA) were used for hundreds of sorties delivering both troops and materiel from the Soviet Union to Afghanistan. (20:2) Within Afghanistan, the use of helicopters to deliver supplies soon became standard procedure. (20:2) Since there was a sizeable and recurring requirement for vehicle and aircraft fuels, the Soviets installed a portion of their pipeline capability. Using Pipeline Troops, at least two fuel pipelines were laid along the Termez-Salang-Kabul Road. (20:3) While these pipelines were vulnerable to guerrilla action, once security was enhanced, these pipelines afforded a significant capability while concurrently offsetting the hazards associated with motor vehicle resupply.

While the Soviets experienced varying degrees of problems associated with resupply and security operations, a contributing factor to the poor performance in the early years of the war stemmed from the fact that their materiel support system, which handles the storage and delivery of repair parts, water, food, fuel, clothing, and ammunition, was undergoing an encompassing reorganization when the invasion was initiated. (20:3) Within this reorganization, the division's transport battalion and disparate supply elements were being replaced by multifunctional support battalions which combined a number of transportation and supply functions. (20:2) Not only was the reorganization taking place at division level, but at the army and front levels multifunctional brigades were also being formed. (20:2) There is little doubt that during the course of the war the Soviets experimented with different procedures and structures to identify the best possible mix for providing efficient and responsive support.

Summary

From a logistical standpoint, the Soviet Union was not prepared for World War II. Supporting a three-phased war, i.e., defensive, counter-defensive, and offensive operations, the organizations and structures of the rear services underwent an evolutionary process during the four years of the war. With the outcome of the war resting, to a large degree, on the adequacy of logistical sustainment,

the Soviets demonstrated unparalleled resolve, tireless dedication, and uncommon flexibility in supporting combat units. Without a doubt, the rear services played an instrumental role in winning the war. The Soviets have subsequently examined all logistical deficiencies of the Great Patriotic War and have worked meticulously, while concurrently dedicating the necessary resources to complete corrective actions.

There is little doubt that the war in Afghanistan has been an expensive endeavor for the Soviet Union. However, and from a perspective of combat readiness, there is also little doubt that the nine-year war has served as an instrument through which rear services troops have gained invaluable combat experience inherently associated with sustaining a significant force over extended LOCs where a persistent threat exists. Shortfalls in the basic survivability skills of rear services troops were identified and more intensive and expanded training in such areas as multi-weapon proficiency and security tasks were incorporated into the curriculum of the military schools. Basically, rear services troops are now expected to fight as combat troops while concurrently performing their support mission.

Largely advocating a doctrine founded on large quantities of motor transport vehicles prior to the war, the Soviets demonstrated uncommon flexibility in using

other transport capabilities to complement motor transport assets. During the course of nine years, the heavy employment of helicopters to move supplies, troops, and wounded soldiers and to resupply troops engaged in combat proved to be an operational concept with considerable merit in the view of the Soviets. The use of the Mi-26 Halo and other comparable helicopters in conducting sustained helicopter support operations improved the confidence of the Soviets to resupply deep-operation forces for extended periods of time. (20:6) The use of the Pipeline Troops and the pipeline to provide needed fuel validated the support concept and provided combat experience from troops and units.

Extensive experience was gained in all aspects of motor vehicle resupply and security operations. Concepts and procedures for safely moving vast quantities of materiel over extended LOCs were developed and refined. The tactics for integrating regular troops, special operating forces, and helicopter and fixed-wing aircraft into security packages for logistics operations were developed. Further, indications are that the Soviets are quite pleased with their motor vehicle fleets which performed exceptionally well with minimum maintenance problems even though the road networks were extremely poor. (12:15)

From an overall assessment, one can be assured that the Soviets have meticulously identified all the lessons to be learned from this war with the Mujahedeen guerrillas.

Changes to such things as doctrine, force structures, equipment capabilities, and sustainment concepts will be made expeditiously. Additionally, and while the war has been costly in some respects, the rear services personnel of the Soviet Union are probably the best trained combat service support personnel in the world at this point and time. And while the Soviet Union withdrew its troops from Afghanistan in February of 1989, the combat and technical skills obtained by the rear services personnel are completely applicable and transportable to a European scenario where the opposition would be troops of the North Atlantic Treaty Organization (NATO).

CHAPTER III

MILITARY SCIENCE

For the Soviet combat forces to be effective in conducting offensive or defensive operations, materiel and support services must be available in the required quantities, at the proper location, and on a timely basis. Force structures of both the combat and support services are driven by the Soviet's doctrine, military art, and tactics. Therefore, it is appropriate to briefly address each of these as they are the bonding links between the combat and support services.

Doctrine

The Soviets continuously stress in their military writings that their enemies are the capitalist states, imperialism, and the aggressive political-military blocs. (1:12) According to the Soviet's view, the United States and other members of NATO will be on one side with the Soviet Union and Warsaw Pact forces on the other; or the capitalist and conservatives will be on one side and the socialist and the radical states will be on the other. (1:12) With these beliefs as a foundation, the Soviets further believe that a future world war will result either from an escalation of a local conflict or from a surprise attack. (1:14) Extending these beliefs reveals that the Soviets feel that a future war will be fought with the

supplies and munitions which are available at the onset of war. (1:14) Consequently, large standing armies must be maintained and supplies and materiels must be manufactured and stockpiled in anticipation of any possible contingency. (1:14) Both the offensive and defensive aspects of a war will require highly maneuverable forces to fight a series of battles on a very large battlefield which will be poorly defined. (1:13) Soviet doctrine further relates that the offense is the preferred and more decisive state of combat. (1:13)

Military Art

The most important field of military science is military art as it delineates the actual forms and methods of armed conflict, and its principles are the basic foundation for the organization and conduct of battles, operations, and war. (1:16) There are 11 principles of military art, and it is these principles that define what the Soviet leadership feels is important in conducting war. (1:17) The Soviet commanders will plan, direct, and fight future wars within the guidelines of these 11 principles which are summarized below.

(1) A large, prepared force is needed to conduct military operations under all possible circumstances. Plans and procedures must be developed to meet all contingencies.

(2) Surprise and aggressive activity should be

used to gain and retain the initiative.

(3) All resources, assets, and capabilities must be used to achieve victory.

(4) Units of all the armed forces and all the branches of the service must cooperate and coordinate with one another.

(5) Forces must be concentrated at the proper time to achieve victory.

(6) The enemy must be destroyed in depth. The enemy can be destroyed in depth in a short period of time by the timely concentration of forces and by maneuvering at a rapid tempo.

(7) The moral-political factor of the enemy must be exploited.

(8) Leadership must be strict. Detailed supervision is necessary as mission-type orders which provide latitude are inappropriate.

(9) Plans are to be accomplished exactly as stated. Steadfastness is key to fulfilling missions.

(10) Combat activity must be safeguarded by good security.

(11) Combat actions must be logistically supported on a timely basis. (1:17)

Tactics

On the low end of the Soviet's spectrum of military art is tactics, and it is this level that is concerned

with military operations at division level and below. (1:19)
An inherent part of Soviet battlefield tactics is logistics which has been receiving much attention in recent years, with the interest in the supply and maintenance areas being responsible for some changes generated in tactics. (1:20)
These changes do not reflect a sudden awakening to the importance of logistics, but do reflect an increased sophistication in both the tactical and logistical arenas. (1:20)

In order to have a complete understanding of how the logistical support structure interfaces with the tactical structure to provide the needed supplies and maintenance, transportation, and medical support, one must have a broad knowledge of the Soviet's eight principles of tactics. These eight principles are briefly summarized below.

(1) Soviet units and organizations are expected to maintain a continuous high state of combat readiness. This is accomplished through effective discipline, training, and maintenance.

(2) Battle is continuous. Momentum is important; the loss of personnel and equipment is more acceptable than the loss of time.

(3) Surprise is essential. Speed and mobility are prerequisites for surprise. By achieving surprise, the conditions for the proper rate of march are created, and logistical problems are reduced because there is less combat action.

(4) All branches of the armed services are coordinated in actions to support the battle. Combined arms fight battles.

(5) Combat power must be concentrated at the right place and at the right time.

(6) Forces maneuver to seize the initiative.

(7) Security is important to the outcome of the battle.

(8) Logistics is important for the timely reconstitution and support of combat forces. (1:19)

Summary

Soviet military science is composed of doctrine, military art, and tactics. It is these components of military science which provide the basic framework for combat service support in the Soviet Army. The Soviets feel that a future war will result from a surprise attack or from the escalation of a local conflict, and that the war will be fought with the supplies and munitions on hand at the start of the war. Consequently, doctrine dictates that large standing armies and stockpiles of supplies be maintained on hand at all times in anticipation of the conflict. The Soviets have 11 fundamental principles of military art with logistics being integral to these principles. During recent years, tactical logistics, division level and below, has received much attention in the Soviet Union, and there is little doubt that the Soviet logistical system has grown

in sophistication. From an overall perspective, the Soviets recognize the importance of logistics and have ensured that their military science provides the requisite interface between combat and support operations.

CHAPTER IV

PRINCIPLES OF LOGISTICS

In examining Soviet logistics during the Great Patriotic War, the war in Afghanistan, and their doctrine as stated today, there are certain principles which can be consistently identified. It is these basic and simplistic principles which serve to provide effective support, even though the prevailing conditions and circumstances may not be favorable. These basic principles are centralized planning, prioritization of supplies, standardization, norms, and forward support. Each of these will be briefly discussed, as these principles within themselves provide insight to the proven support capabilities of the Soviet Army.

Centralized Planning

The current logistical system has evolved primarily from World War II and the nine years of war in Afghanistan; consequently, the system as it stands today is the result of years of training and of proven effective management techniques and organizations. Soviet planning for logistics is centralized at the highest level in the support structure, thereby relieving lower units and combat commanders of the planning responsibility and the associated responsibility of maintaining a large rear services organization. (9:1) In the Soviet Army, the Chief, Directorate

of the Rear Services is responsible for directing and implementing the centralized planning for materiel at all levels in order to achieve economy of effort, flexibility, and efficiency. (15:23) Each higher headquarters determines the materiel requirements of its lower headquarters. (5:6-4) For example, the logistics requirements of a battalion are determined by its parent regiment while the regiment's requirements are determined by the division.

Prioritization of Supplies

Distribution of supplies is performed through established channels and a rigidly enforced priority system. In examining the specified priority list for supplies, it is readily apparent that materiel in support of their combat mobility, firepower, rate of march, and shock action have greater importance than materiel associated with the basic sustainment of troops and the preservation of human life. The Soviet's supply priorities are:

- (1) Missiles (warheads and fuels)
- (2) Ammunition
- (3) Petroleum, oil, and lubricants
- (4) Weapons and equipment
- (5) Rations
- (6) Medical and non-technical supplies (15:27)

Standardization

In the Soviet Union and the Warsaw Pact countries, the factories are state controlled. This fact has afforded

the Soviet Union some significant advantages in the production of weapon systems and support vehicles. As the technological and political leader of the Warsaw Pact countries, the Soviets set the standards which are followed by the other countries. (2:8) Through standardization the amount of training is reduced, repair parts are reduced, supply actions are simplified, maintenance tasks are simplified, economy of production is achieved, and substitutability and interchangeability actions are increased markedly. (15:24) For example, of the 3,544 parts of the ZIL-131, 2½ ton truck, 45 percent of these parts can be used on other ZIL vehicles and 23 percent may be used on other trucks which have the same weight class. (4:5-15) Still further, the engine in the MAZ-537 tank transporter is the same engine that is required in the T-62 tank. (4:5-15) The interchangeability aspect applies not only between Soviet vehicles but also between Warsaw Pact vehicles and Soviet vehicles. (9:9) Standardization is highly supportive of controlled cannibalization on a modern battlefield and could play a major role in the combat capabilities of the Soviet ground forces.

Norms

Materiel support is primary to Soviet combat operations. Materiel support consists of determining requirements for units, ensuring that the prescribed norms are on hand, and ensuring that resupply actions are completed to

replace expended stocks. The Soviets consider the mission, enemy, terrain, time of year, etc. in developing the norms for ammunition, fuel, spare parts, clothing supplies and other supplies. (15:38) Norms have been established to prevent waste, but more importantly they have been established to ensure that needed materiel is on hand in the required amount. (15:38) Norms are established by the next higher headquarters, e.g., battalions determine norms for companies. (15:38) The Soviet norms are measured in units of issue. For example, the accounting for ammunition is "a unit of fire"; for fuel a "refill"; for repair parts a "set"; for food a "daily ration"; and for special substances a "charge." (15:38) These units of issue facilitate accounting, requirements determination, and distribution within a materiel support system which places much emphasis and reliance upon norms.

Forward Delivery

The cornerstone of Soviet logistics doctrine is the principle of forward delivery in which supplies are delivered from the higher echelon to the next lower echelon. (15:25) During times of emergency or fast moving combat operations, intermediate echelons may be by-passed, and the transportation of more than one echelon may deliver supplies to the forward unit. (9:8) In some cases where resupply may be critical to combat operations, critical supplies will be pre-positioned on motor transport vehicles for direct

movement to the using unit. (9:8) There are obvious advantages to these types of shipments. Not only is rapid delivery achieved through a very mobile supply support operation, but there is also a significant reduction in the unloading and offloading requirements, which could entail either troop labor or materials handling equipment.

Summary

In the course of my research, I identified five basic principles which appear to be the proven foundation for effective and efficient combat service support in the ground forces of the Soviet Army. First, logistics planning is centralized, thereby relieving combat commanders of this responsibility. Another aspect of this principle is that each higher headquarters is responsible for determining the materiel requirements of each successively lower headquarters. Second, the Soviets use an established supply distribution system and a rigid system of priorities to ensure that needed materials are moved forward without delay. Third, factories are state owned in the Soviet Union and Warsaw Pact countries. As a result, there is considerable standardization of repair parts on the various models of military vehicles of the Soviet Union and Warsaw Pact countries. Obviously, this principle provides for significant economic and operational readiness advantages. Fourth, the system of norms simplifies determining materiel requirements and aids maintaining the proper

stockage quantity on hand at all times. Fifth, forward delivery is truly the cornerstone of Soviet logistics. Under this concept, the higher echelon is responsible for delivering supplies to the lower echelon. Intermediate echelons may be by-passed in certain circumstances with supplies being delivered directly to the unit engaged in combat operations. These five principles of logistics are highly supportive of offensive operations characterized by continuous combat, a high rate of advance, shock action, and a high tempo.

CHAPTER V

NATO VS. WARSAW PACT

Phases of Conventional War

As the Soviets reached perceived parity with the United States in the 1970s, their feelings of the inevitability of nuclear war in Europe began to change. Their basic belief was that there was now a mutual acceptance of the idea that any use of nuclear weapons would escalate to a stage where total devastation would be achieved by both sides. Of utmost importance to the Soviets is the prevention of nuclear devastation of the "motherland." Accordingly, they began to envision a two-phased war in Europe. In Phase I of the war, the Soviets would use conventional weapons in efforts to defeat the forces of NATO and to rid themselves of any U. S. presence on the European continent. (11:57) Phase II would be a long-drawn-out conventional war in the event Phase I and any peace talks failed. (11:57) Having accepted the belief that conventional war was possible, the Soviets began to restructure their ground forces facing NATO. In the Soviet's view, they would need a capability to launch a massive German-style conventional blitzkrieg at the initiation of war. (11:60) Without nuclear weapons, any breakthrough of NATO defenses would necessitate a marked increase in the sustainability, mobility, and firepower of ground forces. (11:60) As the 1970s transitioned

into the early 1980s, numerous Soviet writers, to include Marshall Ogarkov, indicated that the Soviet's military science was being changed to support operational concepts which were founded on a large-scale incorporation of "smart," non-nuclear weapons. (8:74) Additionally, more and more changes were evidenced in the Soviet's weapons, modernization programs, force structure, operational art, and strategy, clearly revealing the option of high-tech, "smart" weapons to nuclear weapons.

Capabilities of Opposing Ground Forces

Today, the Soviets possess the most formidable combat force ever assembled. The Soviet Army, which is composed of some 1,995,000 soldiers and more than 200 divisions, is organized into 142 motorized rifle divisions, 51 tank divisions, and 7 airborne divisions. (3:1002) Within their arsenal of weapons are approximately 52,000 tanks, 7,500 fighting vehicles, 33,000 artillery guns, and 6,000 multiple rocket launchers. (3:1002) The other two services associated with ground surface operations, Strategic Rocket Forces and Troops of Air Defense, are also large organizations and are well equipped. The Troops of Air Defense consist of approximately 570,000 soldiers who are organized into five air defense district commands. The composite capabilities of the Troops of Air Defense consist of such weapon systems as 1,200 interceptors and 9,000 surface-to-air missile (SAM) launchers at over 1,000

sites. (3:1006) The Strategic Rocket Forces are composed of 300,000 soldiers who are deployed in six rocket armies whose capabilities include 1,396 intercontinental ballistic missiles with 6,240 warheads. (3:1003) Members of the Warsaw Pact, such as Czechoslovakia and the German Democratic Republic, also add significant capabilities. For example, Czechoslovakia's army is comprised of five motorized rifle divisions and five tank divisions. The army includes 145,000 soldiers, 3,400 tanks, 2,500 fighting vehicles, 1,000 pieces of towed artillery, and 975 self-propelled artillery guns. (18:47) Still further, the army of the German Democratic Republic is composed of 120,000 soldiers and four motorized rifle divisions and two tank divisions. Within the divisions are 2,850 tanks, 3,750 fighting vehicles, 870 towed guns, and 330 self-propelled guns. (18:48) The Soviets feel that tactical attack planning is highly instrumental to achieving decisive superiority ratios in both materiel and personnel on the main attack axis. The desired ratio for tanks is 3-5 to 1, artillery is 6-8 to 1, and soldiers is 4-5 to 1. (5:3-81)

In the NATO-Warsaw Pact scenario of today, 78 divisions of the Warsaw Pact countries face the 94 divisions of NATO, if one includes the divisions of Spain and France. (17:47) The composition of divisions within NATO and the Warsaw Pact countries are considerably different. A full-strength American division will have somewhere between

15,000 and 12,000 soldiers, and a West German division will have over 20,000 soldiers. (17:47) A Warsaw Pact division will possess a maximum strength of 12,000 soldiers. (17:47) A comparison of tank strengths indicate that the USSR, including Spain, has approximately 17,000 tanks in its armed forces with another 8,000 tanks in American and other European storage facilities. (17:49) The countries of the Warsaw Treaty have 25,000 tanks.

Theaters of Military Operations

Europe has been divided into three theaters of military operations (TVDs) by the Soviets. The Southwestern TVD affords three initial strategic directions in a war against NATO. (3:995) Pushes could be made southward across Turkey into Asia, southward into Greece, or a push could be made through Hungary and Austria into Italy. (3:995) The Northwestern TVD would be directed toward the Nordic countries, with its principal aim being Norway. The main TVD is the Western TVD, located in Central Europe. Presenting two possibilities in Western Europe, one push could move northward into Denmark, while the second push would attempt to move rapidly across France in an effort to reach the Iberian Peninsula. (3:995) The Western TVD will probably be comprised of two strategic echelons with the first one expected to win the war while the second echelon will be expected to consolidate the victory. (6:121) The first strategic echelon will consist of the Soviet Groups of

Forces and the Category I and II divisions of the non-Soviet armies of the Warsaw Pact. (6:124) The second strategic echelon will consist of any remaining non-Soviet Warsaw Pact divisions and forces from the western military districts. (6:124) The first echelon Front, which will consist of two armies in the first echelon and two armies in the second echelon, will probably attack on multiple axes to achieve operational objectives with envelopments being used whenever possible. (16:166) The Soviet's zones of combat and times and depths of echelons are depicted at figures 5-1 and 5-2 respectively.

Meeting Engagement

Having thoroughly studied the Great Patriotic War and the wars of the Middle East, the Soviets are totally convinced that the factors of mobility, firepower, and ability to conduct "shock action" remain important today, and that the time required to concentrate forces, to regroup, to change direction, or to exploit any particular weakness has been shortened significantly because of improvements and technological advances in each of these three factors. Accordingly, the meeting engagement is now viewed as the typical form of combat. (6:113) Under the meeting engagement concept, both forces would act offensively for some time as the attacker would attempt to penetrate and envelop while the defending force attempted to maneuver reserves and to launch a counter-attack.

	<u>WIDTH</u>	<u>DEPTH</u>	<u>1st ECHELON</u>	<u>2nd ECHELON</u>	<u>RESERVE</u>
Front	200 KM	180 KM	2 CAA	1 CAA	30-180 KM
				1 TK	deep
CAA	30 KM Main Attack	100 KM	2 MRDs	1 MRD	
	80 KM Secondary Attack			1 TD	
Div	10-16 KM Main Attack	20-30 KM	2 MRRs	1 MRR	Regt(-)
	20-30 KM Secondary Attack				
Regt	5-8 KM Main Attack	15 KM	2 MR Bn	1 MR Bn	
	10-15 KM Secondary Attack			(3-6 KM Back)	
Bn	1-1.5 KM Main Attack	3 KM	MRCs	1 MRC	
	1.7-2.3 KM Secondary Attack			(800 meters back)	

Figure 5-1. Zones of Combat (Offense). (16:171)

	Bn-1st	Regt-1st	Div-1st	Army-1st	Front-1st	Front-2nd
	1st Ech COs of	2nd Ech COs of	2nd Ech Bns of	2nd Ech Regt	2nd Ech Div	2nd Ech
	<u>1st Ech Bns</u>	<u>1st Ech Bns</u>	<u>1st Ech Regts</u>	<u>of Div</u>	<u>of Army</u>	<u>Army of Front</u>
Objective	BA Immed.	Regt Immed.	Div Immed.	Army Immed.	Front Immed.	Front
Depth from	2-4 KM	8-15 KM	20-30 KM	180KM(+)	250-300 KM	600-700 KM
FLOT						Subsequent
Distance Beyond	FLOT	2-4 KM	8-15 KM	20-30 KM	50-70 KM	150-200 KM
Initial FLOT						
when Committed						
Time of	H Hour	H + 4	H + 10	H + 18	D + 2 or 3	D + 3 or 4
Commitment						
Mission	H + 2	H + 7	H + 15	D + 2 or 3	D + 3 or 4	D + 7 or
Completion						more

Figure 5-2. Times and Depths of Echelons. (16:170)

(6:113) Through a series of these meeting engagements as the NATO forces attempted to reach their general defense positions, the Soviets would hope that their organization, significantly larger numbers, and extensive training for this type combat would prove successful.

Even if NATO forces are deployed, the worst case facing the Soviet's attack would be the requirement to conduct a conventional breakthrough operation. Leading echelons of the tank and combined arms armies would attack along a broad front on numerous axes attempting to rapidly penetrate the defenses. Massive artillery, missile, and air fires would be used to suppress the NATO forces. Operational maneuver groups (OMGs) would move behind the leading attack echelons and attempt to drive through weak defensive sectors toward objectives deep in the enemy's rear. (16:163) With the objective of supporting the main attack, the OMG at army level may be as large as a reinforced division and at Front level the OMG may possibly be an army. (16:163) With the short distance from the inter-German border to such cities as Bonn, a distance of approximately 300 kilometers, the Soviets are convinced that a short, quick, and conventional offensive action can defeat the forces of NATO.

Summary

As the Soviets achieved military parity in the 1970s, their view of a war in Europe changed. The inevitability of

nuclear escalation and mutual devastation slowly transitioned to an accepted view of a conventional war being fought and won through a two-phased operation. Integral to this operation are massive quantities of conventional forces, "smart bombs," and blitzkrieg tactics founded upon such basic principles as high mobility, firepower, and shock action. Accepting this view, the Soviets have developed a formidable force in the 1970s and 1980s, and today the Soviet Army consists of nearly 200 divisions with almost two million soldiers. With these forces, the Soviets hope to achieve a superiority ratio 3-5 to 1 for tanks, 6-8 to 1 for artillery, and 4-5 to 1 for soldiers.

Dividing Europe into three theaters of operations (TVDs), the main TVD is the Western TVD located in Central Europe. Within this TVD, it is envisioned that the first strategic echelon will consist of the Soviet Groups of Forces and the Category I and II divisions of the non-Soviet armies of the Warsaw Pact. The second strategic echelon will consist of any remaining non-Soviet Warsaw Pact divisions and forces from the western military districts. Zones of combat for first and second echelon forces and reserve forces and the times and depths of each of these echelons have been delineated and are developed to facilitate mobility, firepower, concentration of forces, shock action, and the exploitation of weaknesses in defenses. Leading echelons will attack across a broad front

while OMGs move behind the leading attack echelons attempting to locate a weak area to penetrate so it can exploit the enemy's rear. With this as a basic overview of a conventional war scenario, the Soviet's ability to sustain maneuver operations will now be examined from the national to the company level.

CHAPTER VI
NATIONAL LEVEL LOGISTICS

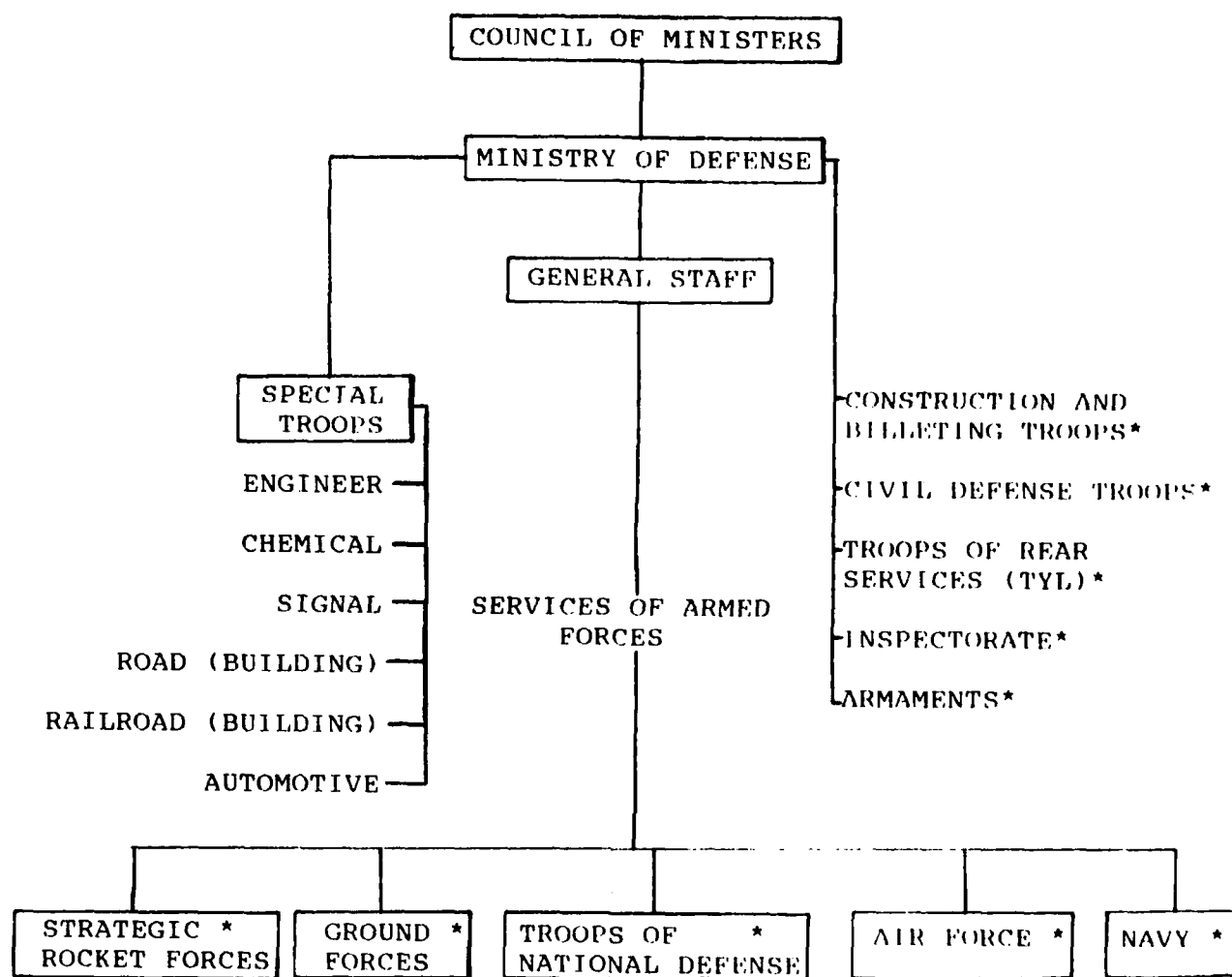
Ministry of Defense

At the national level, the Ministry of Defense has authority over the Soviet military logistical system. The organization and associated command relationships of the logistics system at the national level are depicted at figure 6-1. Under the Ministry of Defense, there are ten deputy ministers, which include the commanders-in-chief of the five military services, Inspector General, Deputy Minister of Armaments, and the Commander in Chief, Soviet Forces Germany. (13:82)

Rear Services Organization

The Chief of Rear Services, who is also called the Deputy Commander of the Rear, has the principal responsibility for logistics. The Chief of Rear Services manages the logistics system using a staff of both combat arms and technical service officers. (15:20) The subordinate directorates of the Chief of Rear Services are at figure 6-2.

The Chief of Veterinary Service is responsible for protection against diseases which are common between man and animal. (5:6-1) The Fuel and Lubricants Supply Directorate is responsible for the requisitioning, storing and issuing of all petroleum, oil, and lubricant products. (5:6-1) The Chief of Intendance is responsible for storing



*-Each Headed By Deputy Minister of Defense

Figure 6-1. Organization of Soviet Armed Forces. (14:133)

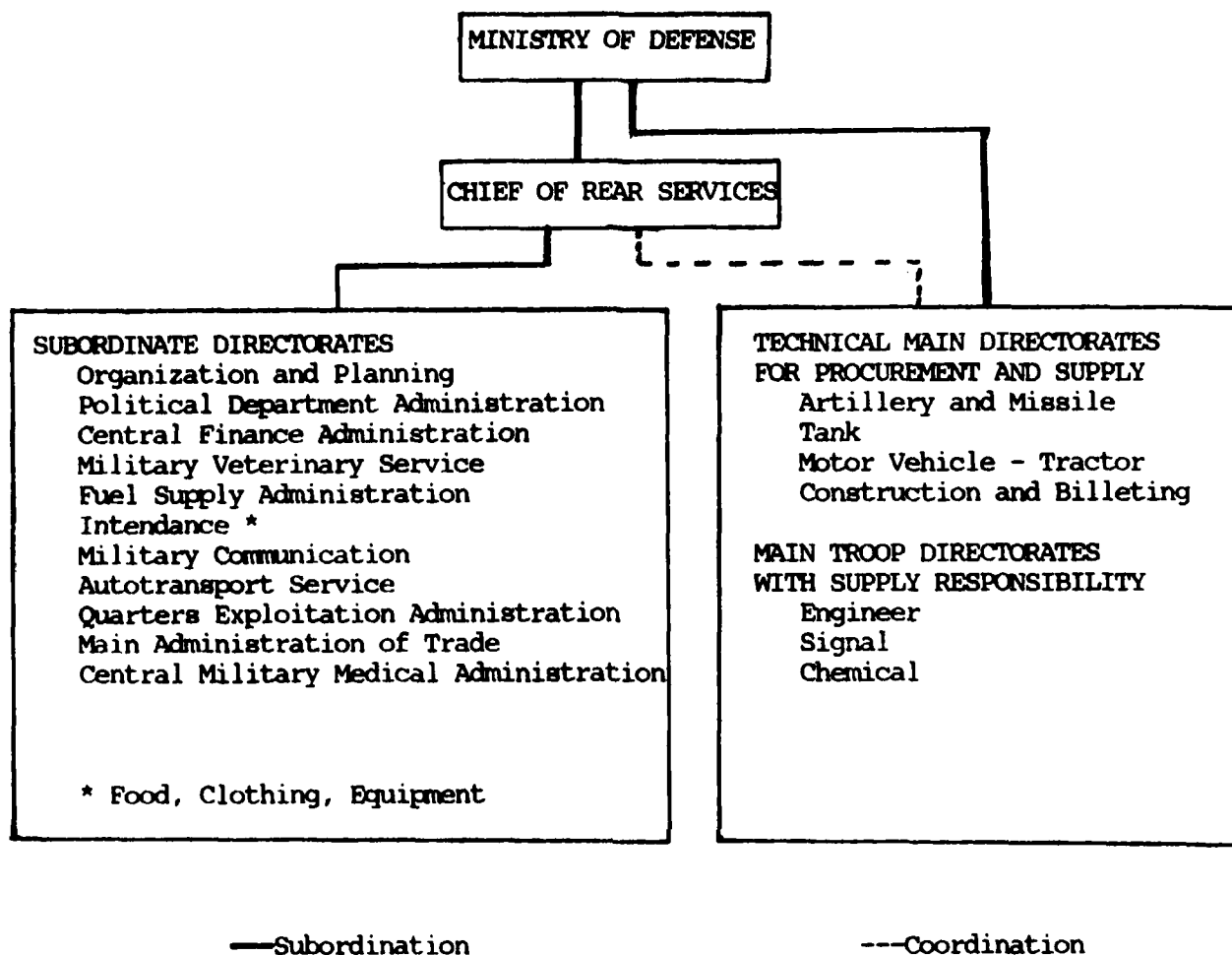


Figure 6-2. Logistical Organization, National Level. (9:5)

and supplying all personal equipment, clothing and rations. (5:6-1) The Chief, Central Administration of Military Communications (Transport) is responsible for planning and organizing the movement of all supplies by either rail, road, aircraft, or ship. (5:6-1) The Chief, Autotransport Service is responsible for providing the prime movers, trucks, and other vehicles used in providing transportation. (14:239) Although the Central Military Medical Directorate is subordinate to the Chief of Rear Services for command and organizational purposes, it is subordinate to the Ministry of Health in medical matters. (5:6-13) Medical service units are organic to all levels of command down through company level. In the event of war, the Central Military Medical Directorate will be able to draw on civilian medical facilities and organizations for equipment, services, personnel, and training facilities. (5:6-13)

The Directorate for Intendance is not represented below Front level, and as a result the responsibility for supplying equipment, clothing and food are assumed by the unit Chief of Rear Services since this position is present at all levels down to regimental level. (15:22) At each progressively lower unit level, the Chief of Rear Services is under the operational control of the unit commander, but he is, in fact, subordinate to the Chief of Rear Services at the next higher level for administrative and technical purposes. (15:22) At each level, the Chief of Rear

Services is the senior logistical officer, and he is responsible for the administration and management of the logistical system. (5:6-1) Each Chief of Rear Services has a staff of officers from the technical services and combat arms for exercising control. (5:6-1)

The Chief of Rear Services is also responsible for coordinating actions with the commanders of arms and chiefs of the technical services who have responsibility at all levels for receiving, storing, and issuing supplies and the maintenance and repair of equipment integral to their respective services (figure 6-2). (15:20) The Chief, Main Missile and Artillery Directorate is responsible for the delivery, storage, and repair of artillery weapons, mortars, air defense weapons, antitank guided missiles, tank weapons, and small arms weapons. (5:6-1) All types of ammunition and cleaning materials and lubricants pertinent to these weapons are also the responsibility of the Main Missile and Artillery Directorate. (5:6-1) The Chief, Main Tank Directorate is responsible for the supply and maintenance functions associated with all armored combat vehicles including armored fighting vehicles, tanks, armored personnel carriers, and self-propelled artillery. (5:6-1) The Chief, Central Motor Vehicle-Tractor Directorate is responsible for providing road transport units and for repairing all non-combat vehicles. (5:6-1) The Chief of Engineer Troops has the responsibility for supplying, storing, and main-

taining all engineer materiel and equipment. (5:5-1) The Chief of Signal Troops is responsible for the supply, maintenance, and storage of all signal materiel and equipment. (5:6-1) The Chief of Chemical Troops is responsible for requisitioning, storing, and maintaining chemical materiel and equipment. (5:6-1)

Special Troops

At the national level, there are other organizations and special troops which, either directly or indirectly, support logistical operations. Included within the various transportation services under the control of the Ministry of Defense are traffic management, rail operations, maintenance and construction, heavy transport, waterway transport, and other modes of transportation, including pipeline. (4:4-1) Railway and motor transport are two important modes of transportation within the Soviet Union.

The Railroad Troops are special troops which are directly subordinate to the Ministry of Defense. The mission of Railroad Troops, which are organized into battalions and companies, is to restore, build, and operate railroads in wartime and peacetime conditions. (10:9) The secondary mission of railway construction units is to defend rail lines by fighting as infantry troops. (10:10) Railroad Troops take an active part in all work that is directed toward developing and rebuilding the Soviet Union's rail network. The Railroad Troops complement the civilian sector by

providing an effective base of low-cost labor. (10:11)

The Railroad Troops have an effective training program, and during recent years they have been exercised extensively with the majority of their training centered on the rapid repair of damaged bridges and rail lines. (10:9) These exercises have been conducted during combined arms and joint exercises. (10:9) From an overall perspective, the Railroad Troops are viewed as being highly technically proficient. (10:4)

The Soviets used their railroad system extensively during World War II to move supplies and troops to the different Fronts. Since World War II, they have worked to improve the capabilities of their railroads, which they feel will be of great importance in any European conflict or war. The rail transportation system is the backbone of the Soviet Union as there still exists today an underdeveloped highway system and a continued reliance on small, general purpose vehicles. (10:4) Realistically, motor transport simply can not compare with rail capabilities in terms of efficient movement of large tonnages. In the mid-1970s railroads transported over 40 percent of all passengers and over 60 percent of all freight. (10:4) Also during the mid-1970s, there was no connecting highway network between the eastern and western regions of the Soviet Union; rail and air provided the only link from the region east of the Urals to the outside world. (14:248) During this same period in the

1970s, thousands of Railroad Troops were involved in building the Baykal-Amur Railroad to obtain a second rail link to the Pacific coast. (14:248) And while Railroad Troops are busy laying tracks in other parts of the country, the Soviets feel their railway system is still lacking since large, modern armies consume considerably more fuel and ammunition than the rates experienced in World War II.

At this time, the great improvements in the mobility of combat forces have not been equalled by the Soviet's rail-oriented logistics system. (10:15) Soviet forces will easily outrun their railheads; consequently, railroads are currently envisioned as being the principal means of transporting fuel, hardware, and other materials from the country's interior to the Front level. (4:4-1) Beyond the recognized, heavy internal commitments of their railroads, the Soviets hope to be able to use rail transport to move supplies to units engaged in combat in a European war. Possessing significant rail transport capabilities in terms of trained personnel and numbers of rail assets, to include a large number of special purpose, all purpose, and 20-ton capacity cargo containers and 70 railroad terminals with the capability to handle these containers, the Soviets hope to develop their rail capabilities to such an extent that large quantities of materiel such as tanks, armored vehicles, rations, and fuel could be moved to depot sites as far forward as possible. (10:15) Today, there are a few

east-west rail lines which connect the Soviet Union to East Germany, Czechoslovakia, and Poland. In their continuing efforts to further enhance their railroad capabilities, the Soviets are consistently emphasizing the use of railroads in their doctrine, and a major part of the curriculum of the Logistics and Transport Academy (formerly the Academy of Rear Services and Transport) is being devoted to rail operations, to include rail design, construction, and repair. (2:6)

The Road Troops are also special troops which work directly for the Ministry of Defense. The Road Troops perform traffic control, bridge construction and road construction for motor traffic. (19:1-2) The majority of this type of work was once done by prisoners. (14:249) The Soviets consider the mission of the Road Troops to be very important since motor transport will be used extensively for moving all classes of supply from the front to company level. (4:4-1)

Significant attention is devoted to the Automotive Troops who also work directly for the Ministry of Defense. (14:249) The Soviets believe that in future wars great dependence will be placed on road transport because of the high probability of intensive interdiction of rail lines. (14:249) Automotive Troops are mostly drivers and mechanics for fuel trucks, tank trailers, refrigerator trucks, and ammunition trucks. (14:249) These troops are also re-

sponsible for maintaining mobile automotive repair shops. (14:249) Automotive Troops are organized into varying-size units and are organic to larger units and the rear services. (14:249) Assigned to fronts, divisions, and regiments, Automotive Troop units may range in size from battalion to platoon. (14:249)

Air and Waterway Transportation

At the national level, air and waterway transportation are important and provide additional capabilities. Soviet civil aviation can be easily converted for military use, and Aeroflot has over 1,600 medium-range and long-range aircraft which could be used for contingencies. (4:4-33) In fact, in wartime it is projected that Aeroflot will serve as an immediate source for fulfilling any personnel or equipment voids in the logistical system. (4:4-33) While movement on the inland waterways in the Warsaw Pact countries would probably be very slow, water transport could be used as a complementing capability to both rail and road transportation. With the Soviet's demonstrated effectiveness in using waterways in World War II, any practical use can be assumed to be developed as an alternative mode of transportation.

Summary

The Ministry of Defense has authority over the Soviet logistical system which is managed by the Chief of Rear Services. The Chief of Rear Services, while directing

a number of subordinate directorates, is also responsible for interfacing with the main troop and technical directorates which are responsible at all levels for the supply and maintenance functions for equipment peculiar to their branch or service. From a command and control standpoint, the Medical Directorate is also subordinate to the Chief of Rear Services; however, in all medical matters the Medical Directorate is subordinate to the Ministry of Health.

As a subordinate directorate of the Chief of Rear Services, the Directorate of Intendance is responsible for supplying all personal equipment, clothing, and food. Since the Directorate of Intendance position is not represented below Front level, the Chief of Rear Services from the army to the regimental level is also responsible for these functions. Within units, the Chief of Rear Services is under the operational control of the unit commander, but he is subordinate to the Chief of Rear Services at the next higher level for administrative and technical purposes. To assist him, each Chief of Rear Services has a staff composed of combat arms and technical service officers.

There are also a number of special troops organizations under the Ministry of Defense. These engineer, chemical, signal, road, railroad, and automotive troops are well trained and represent significant capabilities to the logistical posture at the national level.

CHAPTER VII

MAJOR OPERATIONAL COMMAND LOGISTICS

Theater of Military Operations

The theater of military operations (TVD) is both a geographical area and a level of command which pertains to wartime operations. (19:1-3) The Soviets have divided the world into 13 TVDs, and it is these TVDs that will coordinate and control wartime theater-wide operations. (19:1-3) TVDs include the terrain for conducting front-level operations and also include the military districts which will support operations. (19:1-3) In wartime, the 16 military districts will continue to serve as territorial commands and will perform as mobilization and training bases while also providing logistical support and other services. (19:1-3) A TVD may vary in size, ranging from one to six fronts. (19:1-3)

Front

The front, which does not exist in peacetime, is the largest field unit in wartime, and its composition will be structured and sized in a specific strategic operation in a TVD. (19:1-4) The armies and divisions that are assigned to wartime fronts exist during peacetime within the military districts and groups of forces, and the same is true for the skeletal framework of the combat service support elements. (5:2-6) A front, equivalent to a

NATO army group, may have seven armies with as many as 30 divisions. (5:2-7) Forces within a front may include air defense forces, airborne divisions, air armies, strategic aviation, strategic rocket forces, military transport aviation, signal units, engineer units, intelligence units, and rear services units. The combat service support elements in support of armies will be structured in the same fashion as combat and combat support elements and will be made up of evacuation, repair, supply, transport, and medical units and their facilities; road, bridge, and railroad construction units; and rail and road traffic control units. (5:2-7)

Since the front is a wartime organization and is not operational during peacetime, most information must be gleaned from World War II operations. The front zone of advance will be approximately 200 kilometers wide with a depth of 180 kilometers. (16:171) A typical front would consist of three or four combined arms armies with one or two tank armies with a front mission of conducting one main attack, with one or more secondary attacks within its zones of advance. (5:3-4)

The primary role of the front is logistical support to subordinate units. The front supply bases and logistical depots are large complexes which provide combat service support from their medical, supply, and transportation facilities. Within the complex are also branch

depots from each of the commander of arms and service directorates which control the receipt, storage, and issue of their category of supplies. (5:6-6) At all levels from front through regimental level, each commander of arms and chief of technical services remains responsible for the supply of all items peculiar to his arm or service. (9:3) Items peculiar to the engineer, chemical, and signal services are procured under the supervision of the chiefs of these services from front to regimental level. (9:18) Medical supplies, while a responsibility of the Chief of Rear Services, are managed through independent channels. (9:18) The Chief of Rocket Troops and Artillery is responsible for the procurement and supply of ammunition in the Soviet ground forces, but he must coordinate all shipments of ammunition with the Chief of Rear Services. (9:13) The main front supply base will be located in close proximity to railroad lines some 50-150 kilometers from the rear boundary of subordinate armies. (5:6-6) If the distance between the front and the main supply base becomes too great, the base commander may displace part or all of the base forward. (15:31) Further, front and army levels may provide, as required, motor transport and medical support augmentation to subordinate divisions. (5:3-72)

The commander of the front supply base is subordinate to the front, Chief of the Directorate of Rear Services. At all levels from front through regimental level,

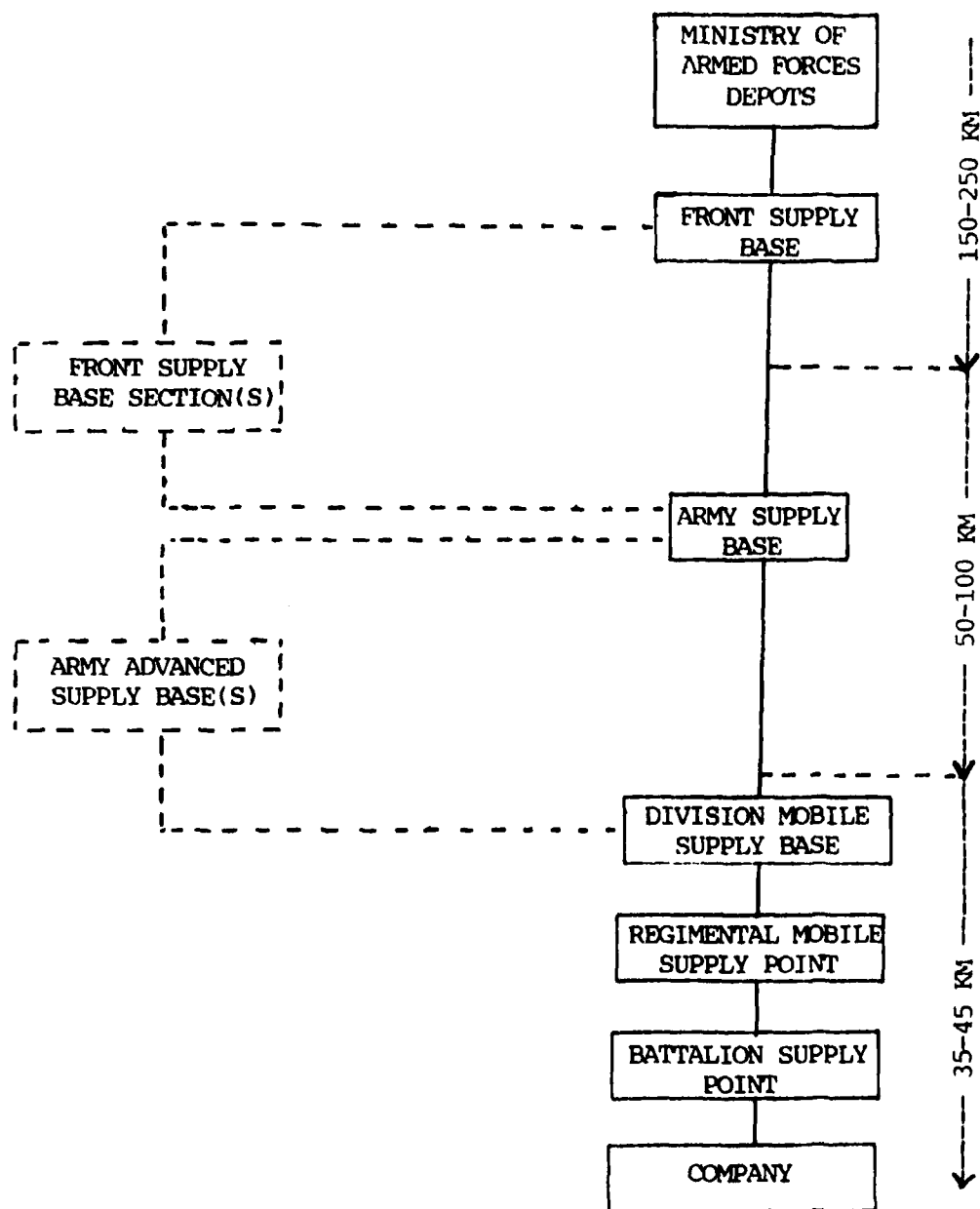
the responsibility for the coordination and control of supplies rests with the Chief of the Directorate of Rear Services who is responsible for:

- (1) Movement of all classes of supplies.
- (2) Supervising and maintaining rear area installations.
- (3) Procurement and supply of equipment, fuel and lubricants, food, clothing, and medical and veterinary supplies.

(4) Overall coordination responsibility for the total logistical requirements, while directly supervising only a small portion. (9:2)

The service chiefs of various arms (branches) coordinate closely with the Chief of Rear Services in performing their supply and procurement responsibilities for their service-peculiar items.

The supply distribution system between the armed forces depots, front and army supply bases, and between lower echelons is at figure 7-1. The military district, wartime front, receives its supplies from the national armed forces depots or from the industrial production line and subsequently delivers to the army supply base(s). Under the forward delivery system concept, the transport of the higher echelon normally delivers to the lower echelon; however, from the regimental level to the army supply base, transport from the lower echelon may be used if available.



Note 1. Transportation may be by road, rail, air, pipeline, or inland waterway from armed forces depots to army advanced supply bases. At lower levels, road transportation is used.

Note 2. From regiment to company level, delivery is always higher to lower. From regiment to army supply base, transport from the lower echelon may be used as available.

Figure 7-1. Supply Distribution System(5:6-7)

(5:6-7) In offensive operations, second echelon units are responsible for assisting in resupply operations for first echelon units. (5:6-6) Delivery is always from higher to lower from the regimental to company level. (15:25) The transportation from armed forces depots to army advanced supply bases may be by road, rail, pipeline, air or inland waterway transportation. (5:6-7)

At the front level there is one or more motor transport brigade in support of subordinate armies and divisions. (15:26) In wartime, front and army units will be augmented by civil transportation units. (5:6-6) The Soviets also have a significant tank hauling capability, and this capability along with the number of road networks across Czechoslovakia, Poland, and East Germany will allow them to inject significant quantities of tank vehicles in maintenance-free condition into any war in a minimum period of time.

The importance of petroleum, oil and lubricant supply operations to modern combat is emphasized in Soviet doctrine. In fact, the Soviets believe that during offensive operations the fuel requirements will be 50 percent of the total supply requirements; a requirement that could equate to 25,000 tons per day for a front operation. (15:30) The rate at which rear services can supply fuel is viewed by the Soviets as a primary limitation to the desired rate of advance. Consequently, the rear services have had to

take actions to streamline operating procedures and to modernize their equipment in order to achieve the necessary combat service support posture. (4:3-1)

The Soviets have a number of different types of fuel service trucks with ranging fuel capabilities. They have also developed a dual-purpose semitrailer which can transport 7,500 liters of fuel and which has a bed capacity of 13.8 meters where dry cargo can be transported. (4:3-19) With the capability of reaching a speed of 55 kilometers/hour, this vehicle has concealed tanks under the cargo bed; consequently, the entire vehicle has the outward appearance of being a cargo vehicle. (4:3-19) The Soviets have also developed a vehicle for support operations during cold weather. Designated the MA-4, this combination water and POL truck is capable of transporting 1,400 liters of diesel fuel, 340 liters of gasoline, 300 liters of oil, and 760 liters of heated water over long distances. (4:3-19) If a shortage of tank trucks, tank trailers or fuel and oil service trucks should ever exist, the Soviets have the capability to adapt closed-side cargo trucks for the transport of bulk portable collapsible containers and portable steel containers. (4:3-21) The Soviets have a kit that readily adapts the URAL-375N and KamAZ-5410 and KamAZ-5310 to carry bulk storage containers which further permits them to transport fuel without having to rely on the availability of standard fuel trucks. (4:3-21) In fact, these cargo trucks

with specialized containers often exceed the fuel capabilities of the standard fuel transport trucks. (4:3-21) The Soviets have also recently developed several other pieces of POL equipment which are supportive of improved readiness.

Several types of truck-drawn pump stations have been developed to support pipeline operations. (4:3-25) Recently, the Soviets have developed truck-mounted and trailer-mounted fuel transfer pumps which will enable them to empty or fill tank trucks, tank cars, and depot storage tanks. (4:3-25) The MZA-3 electric dispensing pump was developed to allow armored combat vehicles to be refueled from 200-liter drums or other fuel containers. (4:3-25) Still further, a number of manual and automatic nozzles have been developed for dispensing fuel into containers, drums, or vehicle tanks. (4:3-25)

At the front and army POL depots, fuel is stored in tanks and oil and lubricants are stored in 150 to 500 liter drums. The army level has the requirement to maintain two to three days of supply on hand. (9:11) To get the required amount of fuel forward, the portable tactical pipeline serves as a very important concept to the Soviets. While the pipeline will not go lower than division level, separate pipeline brigades and battalions are available at both front and army levels, and these units construct pipelines in the direction of the main attack. (15:30) A

brigade pipeline unit possesses the capability of laying a four-inch pipeline at a rate in excess of 40 miles per day by using a pipelaying machine which requires only two operators to lay and couple pipe. (9:13) One particular pipeline can carry up to 2,000 tons of fuel each day, and it is designed so that 24 fuel trucks can refuel at once. (15:30) By maintaining the bulk of these logistical resources at front and army levels, the senior commander maintains the flexibility of deciding which axis of advance will receive the larger allocation of logistical resources. (9:1)

Technical service in the Soviet Army equates to maintenance support in the United States Army. Given the expanding technology, increased mechanization, and improved mobility of the Soviet's forces, maintenance is playing an ever-widening and more critical role in planning the logistics relating to Warsaw Pact forces. (4:5-1) Each of the five major service branches, i.e., Air Force, Ground Forces, Air Defense Forces, Navy, and Strategic Rocket Forces, has organic maintenance capabilities in its rear services organization. (4:5-1)

The Warsaw Pact doctrine states that technical maintenance is responsible for:

- (1) Maintaining equipment in proper operating order.
- (2) Executing repair and evacuation on a timely

basis.

(3) Proper administration of men and materiel.

(4:5-1)

The Soviet-Warsaw Pact doctrine also provides for a system of echelons for maintenance and repair services. With the doctrine further stressing the expeditious return of damaged vehicles, short distances between the combat units and supporting technical service units will be maintained. The front depots will be the greatest distance from combat operations being situated as far as 600 kilometers from the front line of own troops (FLOT). (4:5-2) Army technical service assets may be as far back as 100-120 kilometers while technical service assets at division and below levels will be situated 20-70 kilometers from the FLOT. (4:5-2)

Within the Soviet ground forces, repair is divided into the following three categories.

(1) Routine repairs--These repairs involve the adjustment or repair of components in a minimum period of time. The replacement of tires, fuel pumps, carburetors, etc. are examples of routine repairs. Routine repairs are performed at echelons at or below division.

(2) Medium repairs--Medium repairs involve such actions as the replacement or overhaul of engines or transmissions. These repairs are normally performed at division, army, or Front level.

(3) Capital/major repairs--These repairs entail

major overhaul and reassembly of major components and sub-components. These repairs take place at the army, front, or industrial base level. (9:16) In order to reduce the time associated with performing a repair action, repair parts and assemblies are maintained in accordance with prescribed stockage levels from front to battalion level.

The front maintenance units are manned and equipped to perform capital repairs and will operate from either fixed or mobile facilities. (5:6-11) With the maintenance of Soviet equipment being commodity oriented from front to regimental level, these fixed and mobile repair facilities will perform repairs for tanks, motor vehicles and tractors, main missile and artillery, engineer, signal, and chemical equipment. (15:48) The staffing for maintenance responsibility from front to company level is at figure 7-2.

In order to save money and to reduce maintenance expenditures during a peacetime environment, the Soviets are placing large amounts of equipment in storage; stored vehicles remain operational, fully equipped, and protected against the elements. (4:5-15) It is estimated that somewhere between 15-35 percent of units' equipment is maintained in the hands of troops for training purposes. (9:19)

The mission of the Soviet Army Medical Service is to treat and return casualties back to combat in a timely manner. The Medical Service accomplishes this mission by providing forward aid to the wounded and sick and by pro-

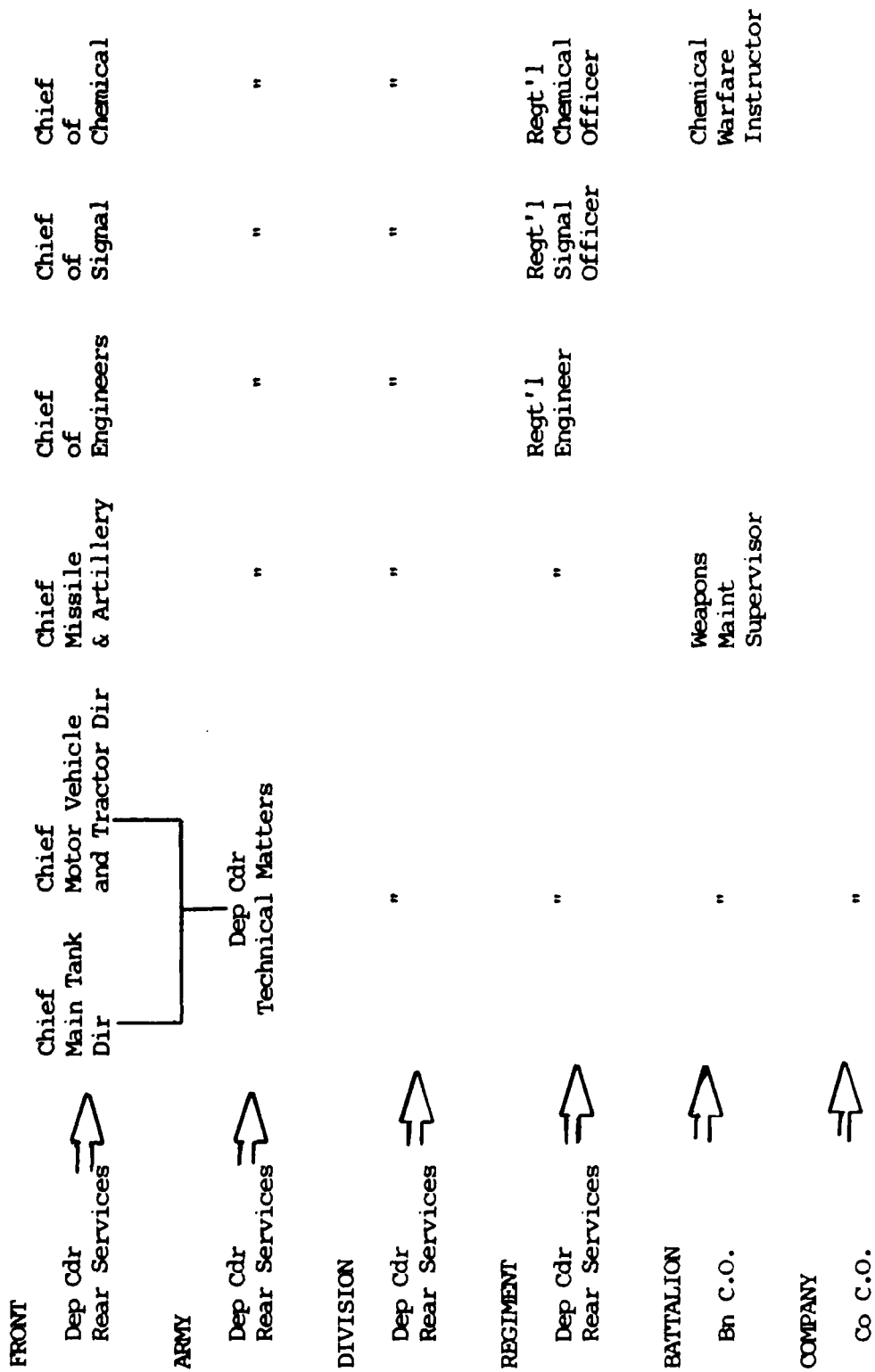


Figure 7-2. Staffing for Maintenance Responsibility. (5:6-10)

viding expeditious evacuation, as required, to a facility where the proper care can be administered. The Medical Service is also responsible for performing dental medicine, medical supply, sanitation control, and the inspection of water and food supplies.

Medical service units and personnel are authorized at all levels of command down through company level. From company through front level, each echelon has prescribed responsibilities in a multistage evacuation process which is based on the principle of minimum treatment being performed at each level. (4:9-1) Below army level only life-saving treatment is provided to casualties. (4:9-1) All Soviet doctors are of officer ranks, and medical assistants (feldsher) are warrant officers. (5:6-14) The feldshers are trained extensively and are fully capable of performing a variety of minor surgeries and of treating routine ailments. (5:6-14) Noncommissioned officers serve as medical orderlies and their responsibilities include training of troops and of performing administrative duties. (5:6-14)

All medical supplies are distributed only through medical channels with each level from the Central Military Medical Directorate to the regimental level being responsible for supplying the requirements of subordinate units. (4:9-16) Requirements for medical supplies are forwarded to each higher level as most of the stockages are main-

tained at the depots at army level. (4:9-16) The majority of medical supplies and equipment are configured into specified kits and are issued to fill the needs of particular individuals, crews, or units. (4:9-17) For example, there are ambulance kits, kits for aircraft, tank crew kits, and special geographical and climatic kits. (4:9-16)

Medical transport at lower levels is austere with basic, lifesaving first aid being the principal category; therefore, rapid evacuation to the army level hospital is necessary. Evacuation vehicles include the GAZ-71, GAZ-83, LUAZ-967-M, LUAZ-969-M, UAZ-452A, GAZ-47, and the UAZ-450A. Aircraft such as the Ka-15/HEN, Ka-26/HOODLUM, and the Mi-4/HOUND helicopters and the An-12/CUB and An-2/COLT fixed wing are either designed or designated for evacuating casualties. (4:9-17) While designated wheeled transportation and available aeromedical transportation will certainly transport casualties, returning supply and maintenance vehicles are envisioned as the primary means of evacuation.

At the front level, the Medical Directorate will have several attached hospitals operated by the front's organic medical regiment which will perform screening, specialized surgery, convalescent care, and evacuation to the country's interior. (5:6-14) The casualties arriving at receiving hospitals are either retained or evacuated by hospital trains, ships, or aircraft to hospitals in the interior where the Ministry of Health controls the hospitals.

(4:9-14) Front level hospitals are deployed infrequently and are most often established in existing military or civilian medical facilities which may be from 60 to 400 kilometers from the FLOT. (4:9-14) The front has approximately 20,000 beds, and convalescent care at this level may vary from six weeks to over eight months in length. (4:9-14)

While Soviet doctrine stresses the use of existing water networks and surface water, they assume that an enemy will contaminate the water supply; therefore, they have the requisite personnel and equipment to provide water in all regions of operations. (4:7-1) In developing their personnel and equipment daily water requirements, the Soviets have taken into account the possible contingencies under which they might have to fight. (4:7-1) The existing doctrine of the Soviets has been based on their rather extensive experience as well as that of other Warsaw Pact forces. (4:7-1)

Working in close coordination with one another, medical service units and engineer units develop the plans for water supply operations. (4:7-1) If surface water is not available or can not be used, Soviet engineer units have the capability to drill for water and to operate mobile purification plants. (4:7-1) At the front, army, and division levels, engineer units establish water supply points. At the division level, the Field Water Supply Section of the Technical Company of the Engineer Battalion will provide

for water supply. (4:7-1) The Chief of Rear Services at the division is responsible for ensuring that water is delivered to the battalion distribution point. (4:7-2) The delivery of water from the battalion water distribution point to the companies is the responsibility of the battalion's chief of staff. (4:7-2) Water normally accompanies hot food.

The Chief of Rear Services is responsible for all ration support, whereas the Directorate of Rations Supply at the Ministry of Defense establishes the norms for a one day supply of rations. (9:10) Rations are issued on the basis of meals per man per day, and the norms for a one day supply are based on caloric requirements. (9:10) Rations are pushed to battalion level with each division maintaining five days of supply on hand. (9:10)

Fresh products and meats will generally be issued when occupying assembly areas, while canned products will be issued when units are on the march or when conducting offensive operations. (4:6-4) Bread is an important part of the Soviet soldier's meal with either white or black bread being issued with all three meals. (4:6-4) The Soviet's "dry ration," which consists of fish with rice, bread, dehydrated soup, and tea, is issued when hot meals can not be prepared in one of the kitchen trucks or vans. (4:6-6)

During the 1978-1980 time frame, the Soviets issued

a new combat ration consisting of a meat patty (pork or beef with seasonings); kasha (porridge); rice, pea, or barley with seasonings; fruit salad and condiments; and four slices of dried bread. (4:6-8) This meal has 98 grams of protein and is composed of 2,910 calories. (4:6-8) This meal was not a significant improvement over the existing meal with the most marked difference being the addition of a canned fruit. (4:6-9)

The Soviets have developed several kitchen trucks and vans which are capable of providing excellent support during combat operations and even when operating in a contaminated environment. Figure 7-3 depicts some of the Soviet field food service equipment which was introduced during the 1970-1980 period, while figure 7-4 provides characteristics of some of the food service equipment. The PAK-200 truck-mounted field kitchen is designed for the support of tank units with one PAK-200 currently authorized in each tank battalion. (4:6-11) There are also indications now that a PAK-200 will be assigned to each motorized rifle battalion in the near future. (4:6-11)

The Soviets have worked extensively in ensuring that their soldiers are provided vans and tents where they can eat safely when operating in a contaminated environment. (4:6-18) They have developed a wide spectrum of decontamination equipment which may be divided into four large categories: individual, portable, vehicle-mounted,

PAK 200--Truck kitchen

GT-T--Field kitchen, mounted on tracked vehicle

KP-130--Trailer kitchen

KG-300--Gas cooking device, mounted on GAZ-66B truck

KG-40--Gas cooking device, mounted on ZIL-130 truck

KA-125--Truck kitchen (on GAZ-66 truck), feeds 125 officers

SA-32--Mobile mess van (on ZIL-131 truck), feeds officers

SP-32--Trailer mess hall for officers, collapsible shelter
van on 4 axle trailer

Figure 7-3. Field Food Service Equipment Fielded
1970-1980.(4:6-11)

<u>Nomenclature</u>	<u>Setup Time</u>	<u>Takedown Time</u>	<u>No. of People Fed</u>	<u>Remarks</u>
KP-125	30 min.	1 hour	125-150	Can cook on the march; CPR protection provided.
KP-130	30 min.	1 hour	125-150	Can cook on the march; CPR protection provided.
PAK-200	10 min.	10 min.	200	Can prepare food and cook on the march; CPR protection provided.
GT-T	10 min.	10 min.	140	Can prepare food and cook on the march; CPR protection provided.

Figure 7-4. Characteristics of Soviet Food Service Equipment.(4:6-12)

and rapid decontamination. (4:6-18)

Army

The army is the largest peacetime combined arms formation. The army has a permanent staff and an authorized and assigned complement of non-divisional combat service support elements. (5:2-7) An army will normally have three to seven divisions, SSM brigade, antitank units, AAA units, SAM regiments, several artillery brigades, signal regiment, combat engineer units, pontoon units, assault crossing units, transport units, supply facilities, evacuation and repair units, and medical facilities and units. (5:2-8) The combined arms army and the tank army are the two types of armies. The combined arms army is usually composed of two or three motorized rifle divisions and one or two tank divisions. The combined arms army has organic rear services units very similar to those within the front, but the army's rear services units are positioned well forward to support subordinate divisions. (15:15) Three combined arms armies are normally within the first echelon of a front and have a breakthrough mission. (15:15) The tank army is a highly mobile force consisting of three to four tank divisions and one motorized rifle division with a mission of pursuit and exploitation. (15-15) One tank army and one combined arms army normally comprise the second echelon of a front. (5:3-4) The combat service units of tank armies possess the same mobility as the combat and combat support

units which they support. The operational maneuver group of an army will be either a tank division or a motorized rifle division.

The army supply base is similar to a front supply base; however, the army supply base is smaller and more mobile. (15:31) When possible, the army supply base will be located about 100 kilometers behind the FLOT and near a railhead to facilitate delivery of supplies. (5:6-6) Army advance supply bases (figure 7-1) may be established immediately behind division sectors as deemed necessary. (9:18) A single army railhead may serve a number of supply bases, and each supply base will support up to three divisions. (10:13) Delivery forward to divisions will normally be accomplished by army trucks as there are one or more motor transport regiments with approximately 1,000 trucks per regiment to effect delivery from army level. (15:26) The commander of the army supply base is subordinate to the army, Chief of the Directorate of Rear Services.

At the army level, maintenance is accomplished by fixed and mobile repair facilities for tracked vehicles, wheeled vehicles, artillery, engineer, chemical, and signal equipment. (5:6-11) Armies are augmented by fronts as required. (5:6-12) To facilitate and expedite repair operations, the army will deploy mobile facilities forward in support of divisions.

There are two types of medical support at army

level--the primary support is the mobile field hospital while secondary support is provided by independent medical battalions which are used to augment divisions as required. (4:9-12) The mobile field hospitals will normally organize into a hospital base which may include evacuation, sorting, neurological, therapeutic, surgical, and infectious disease hospitals. (4:9-12) This hospital base will normally deploy as far forward as possible so that casualties can arrive within 24 hours. (4:9-14) Just as the division medical point normally sets up along main supply routes (MSRs), the army's hospitals within a base will be dispersed at least five kilometers apart in an area along major evacuation routes. (4:9-14)

Summary

The Soviets have divided the world into 13 theaters of military operations (TVDs). Each TVD is a geographical area as well as a level of command. The TVD includes terrain for front-level operations and the military districts which will support operations. In addition to providing training bases, the military districts provide logistical support and services during wartime. A TVD may have up to six fronts.

The front, which is the largest field unit in wartime, is equivalent to the NATO army group. With as many as seven armies and 30 divisions, the front will be approximately 200 kilometers wide with a depth of 180 kilometers.

The primary role of the front is logistical support to subordinate units. Front supply bases and logistical depots are large complexes which provide combat service support from their medical, supply, and transportation facilities. The main front supply base will be located near rail lines approximately 50-150 kilometers from the rear boundary of subordinate armies. National armed forces depots or production lines deliver to the front which, in turn, delivers to the army supply base. Transport brigades and pipeline battalions and brigades are authorized at front level to deliver supplies and fuel forward. Also organic to the front level, repair depots will be approximately 600 kilometers from the FLOT. Front maintenance units will operate from either fixed or mobile facilities while performing capital repairs. There will be several attached hospitals operated by the front's medical regiment which has the capability to perform screening, specialized surgery, convalescent care, and evacuation to the country's interior. The front hospitals have a 20,000 bed capacity, and they most often establish operations in existing military or civilian medical facilities from 60 to 400 kilometers from the FLOT.

The army is the largest peacetime combined arms formation. It has a permanent staff and an assigned complement of non-divisional combat service support elements. The army will have three to seven divisions as well as

evacuation and repair units, transport units, supply facilities, and medical facilities and units. The army's rear services units are mobile for the most part and are positioned well forward to support subordinate divisions.

CHAPTER VIII
DIVISION LOGISTICS

Organization

Divisions are highly mobile units with combined arms structures which are further complemented by a comprehensive array of combat support and combat service support units. The Motorized Rifle Division (MRD) has 12,695 soldiers within its two Motorized Rifle Regiments (LTR), one Motorized Rifle Regiment (RMP), one Tank Regiment, and other units. (19:4-34) The MRD has 576 APCs, 220 tanks, 126 artillery tubes, 18 multiple rocket launchers, and four FROG launchers. (19:4-34) The complete structure of the MRD is at figure 8-1. The Tank Division (TD) has 11,470 soldiers with 7,050 of these soldiers being assigned to three Tank Regiments and one Motorized Rifle Regiment. The TD has 328 tanks, 126 artillery tubes, 18 multiple rocket launchers, and four FROG launchers among its weapon systems. (19:4-107) The organization of the TD is at figure 8-2. The Ministry of Defense assigns the priorities through which divisions are provided modernized equipment or equipment to fill existing shortages. (19:1-4) The capabilities of Soviet divisions have been upgraded significantly over recent years with 122 mm howitzer and helicopter units being added to both the MRD and TD; these changes and others have enhanced the Soviet's flexibility.

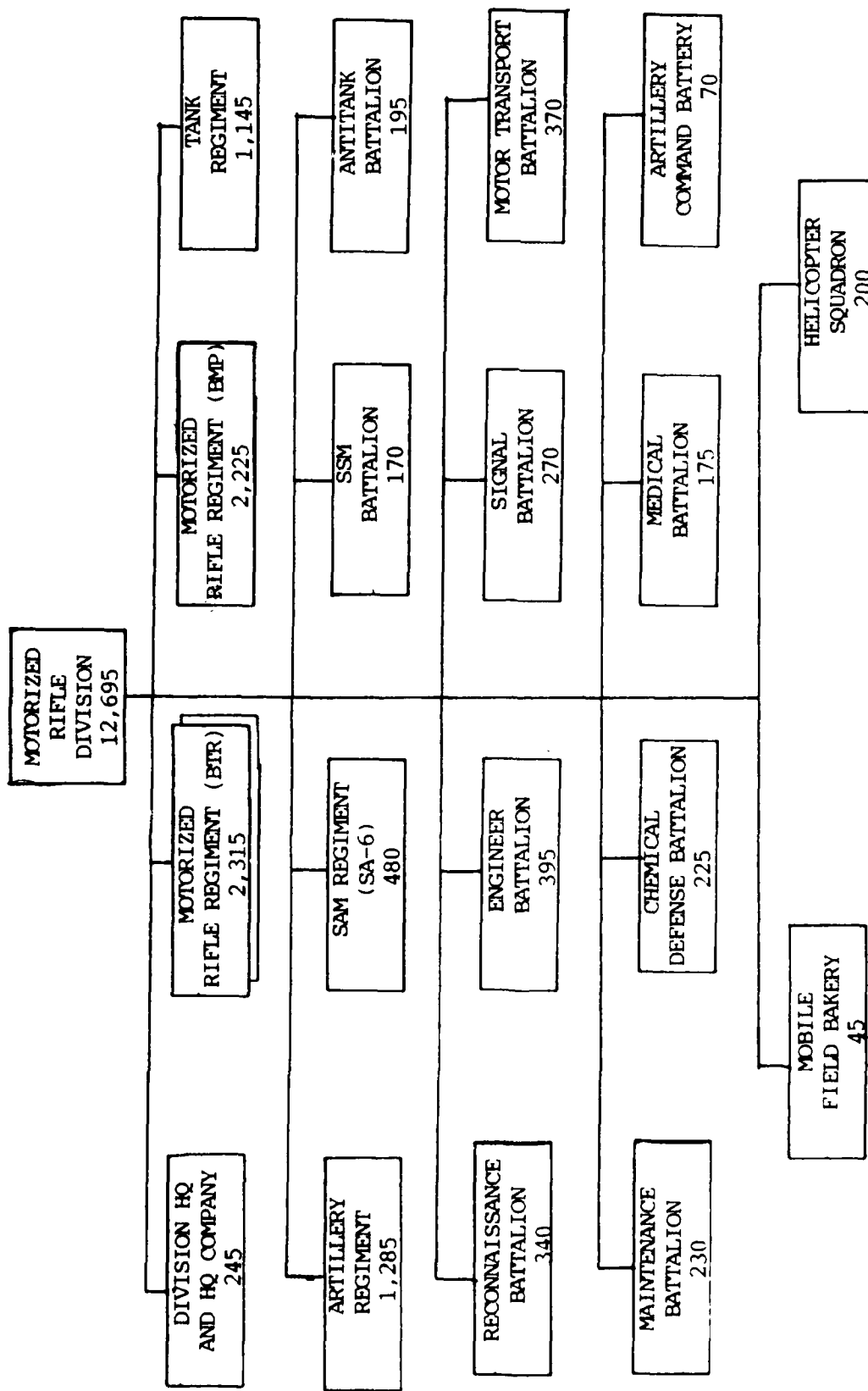


Figure 8-1. Motorized Rifle Division. (19:4-33)

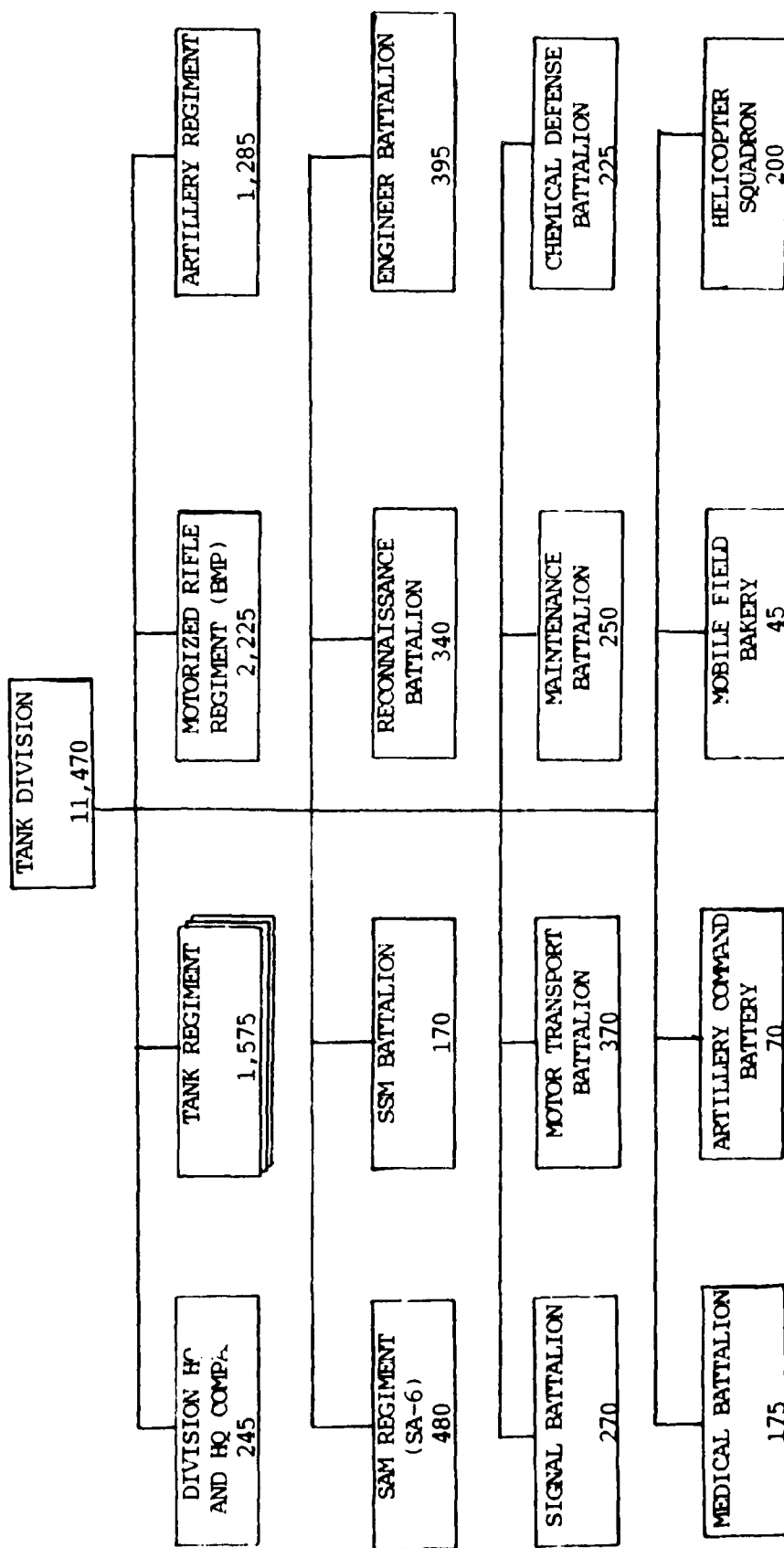


Figure 8-2. Tank Division (T-64 72/80). (19:4-106)

(19:1-5)

As a maneuver force, the division commander will conduct high tempo operations using his mobility and firepower. The zone of advance for a division will be 20-30 kilometers wide with the main attack frontage being 4-16 kilometers wide with the secondary zone being 10-30 kilometers wide. (5:3-84) The division commander's immediate objective will be 20-30 kilometers in depth with his subsequent objective being 50-70 kilometers. (5:3-89) The subordinate regiments will have immediate objectives 8-15 kilometers deep and subsequent objectives 20-30 kilometers deep while their subordinate battalions will have immediate and subsequent objectives of 2-4 kilometers and 8-15 kilometers respectively. (5:3-89) When the division is on the march, the rear services will be 15-20 kilometers behind the main body. (5:3-20)

At the division level, there are a number of personnel who are responsible for logistics functions. The division Chief of Rear Services is responsible for:

(1) Allocating all transportation resources to support all supplies being hauled forward to subordinate units.

(2) Procuring, stocking, and issuing all food, clothing, POL, and common user items of supply. (9:3)

Key subordinates to the Chief of Rear Services include the Chief of Food Supply, Chief of Intendance, Chief of Motor Transport, Chief of Medical Services, and Chief of Fuel

and Lubricants. (9:6) The Chief of Rocket Troops and Artillery is responsible for:

(1) Planning the procurement and expenditure of all types and categories of ammunition.

(2) Procuring and issuing all artillery and small arms ammunition. (9:7)

The Chief of Engineer, Chief of Signal, and Chief of Chemical are responsible for:

(1) Procuring, storing, and issuing repair parts for materiel peculiar to their service.

(2) Maintaining those items peculiar to their service. (9:7)

The Deputy Commander for Technical Affairs is responsible for:

(1) Procuring, storing, and issuing combat and non-combat vehicles.

(2) Procuring, storing, and issuing repair parts for combat and non-combat vehicles.

(3) Maintaining repair facilities for combat and non-combat vehicles. (15:22)

The organizational structure for logistics at the division level is depicted at figure 8-3.

The key logistical units within both the MRD and TD are the Motor Transport Battalion, Maintenance Battalion, and the Medical Battalion. The Motor Transport Battalion provides both the functions of transportation and

supply with its organic POL Transport Company, Cargo Transport Company, two Ammunition Transport Companies, and Supply and Service Platoon (figure 8-4).

In preparation for and during the march, divisions and their subordinate units perform logistical operations to facilitate accomplishment of their mission. Prior to the march, rear services units and elements are sent forward to perform maintenance, replenish supplies, and to evacuate the sick or wounded. (5:3-27) During the march, logistical support is performed along the axis of advance at halts or rest stops. Vehicles are repaired along the road if possible. Detailed planning and coordination between the rear services chiefs, commanders of rear services units, and the supported commanders are required in order to effectively control rear services operations during the march. (5:3-27) At the regiment and division levels, the Chief of Rear Services heads a rear control point in order to maintain continuous control over the rear. (5:3-27) The rear control point normally moves at the head of the rear services column. (5:3-27) The division's repair and evacuation groups and medical post will move behind the division's first echelon while other rear services units will move 5-10 kilometers behind the second echelon. (5:3-100)

Transportation

The Soviets will distribute supplies within their

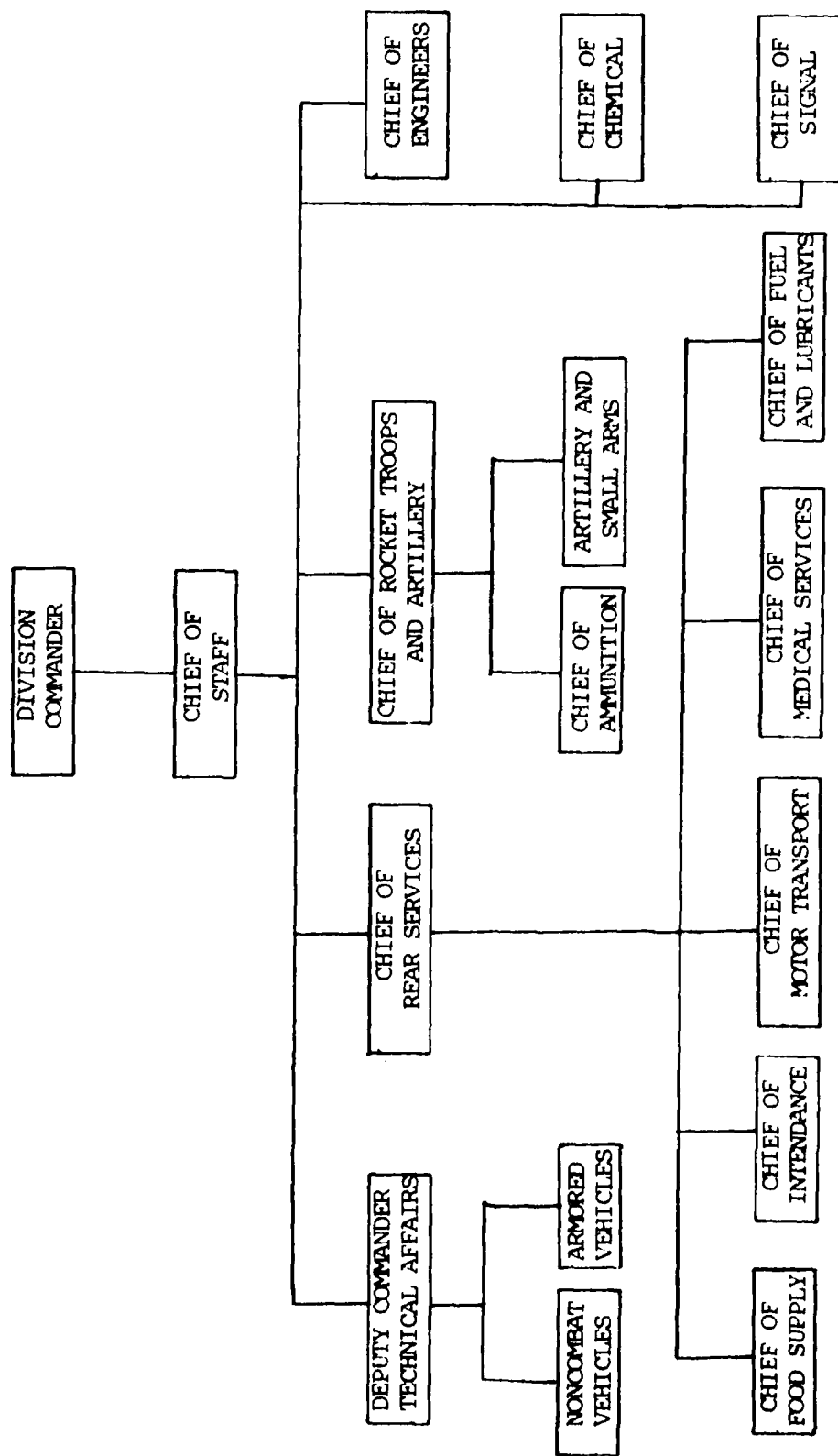
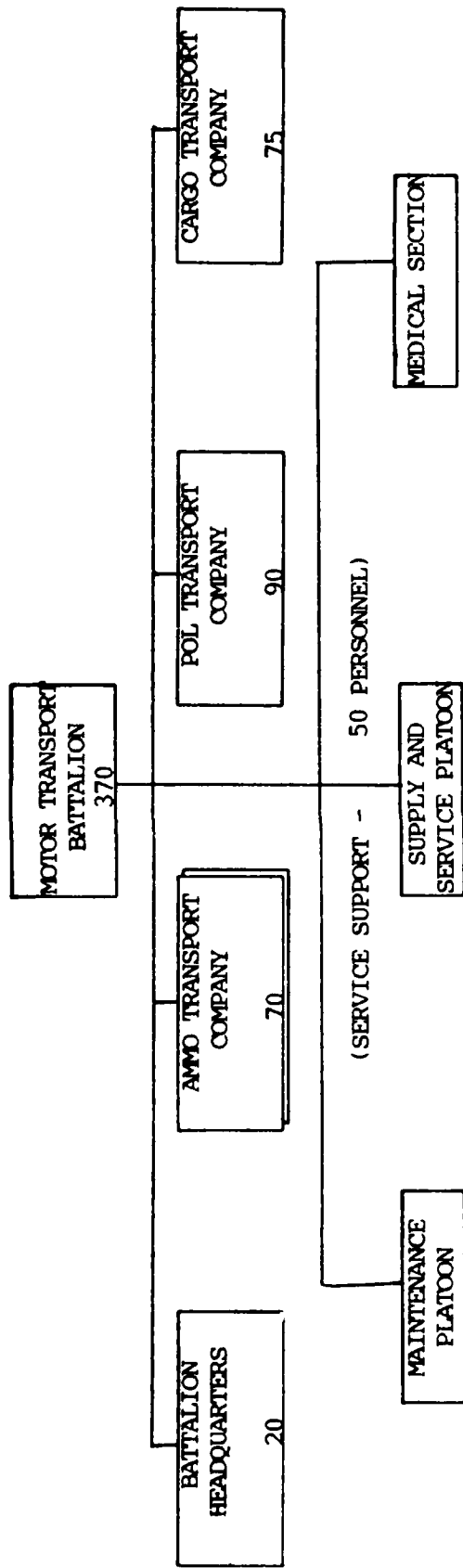


Figure 8-3.Division Rear Services Staff.(9:6)



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total	Equipment	Total
ATGL, RPG-16	15	Truck, Field Kitchen, PAC-170/200	2
Truck, UAZ-69/469	6	Truck, Ambulance, UAZ-450A/452	1
Truck, GAZ-66	33	Trailer, Cargo, 2-Axle	122
Truck, ZIL-151/157	30	Trailer, Cargo, 1-Axle	2
Truck, Ural-375	120	Trailer, POL, 2-Axle	80
Truck, Van, GAZ	1	Trailer, Generator	6
Truck, Van, ZIL	2	Trailer, Water	3
Truck, Van, ZIL (Maintenance)	9	Radios:	
Truck, Van, UAZ-452	1	HF, Manpack, Low-Power, R-104M	1
Truck, POL, Ural-375 (5,200-Liter)	80	HF/VHF, Vehicle Mount, Medium-Power	1
Truck, Crane, K-61	5	VHF, Manpack, Low-Power, R-107	4
Truck, Water Tank	6	Warning Receiver, R-311	1

Figure 8-4. Motor Transport Battalion, MRD, TD. (19:4-80)

fronts primarily by truck with distribution at division and lower echelons being accomplished almost entirely by truck. With this realization, the Soviets have pursued developing the capabilities to meet their estimated requirements. The vehicle inventory, in their view, is the major limitation to transporting the daily requirements of supplies since they further believe that the highway network in Central Europe is well developed and is capable of adequately supporting the necessary operations. (4:4-8) In an effort to eliminate their perceived transportation shortfall during wartime, all Soviet private and state-owned vehicles must be registered with the military commissariat for mobilization purposes. (14:143) Further, and in the event of mobilization, the driver is expected to move his vehicle into action without any delay. (14:143)

The Motor Transport Battalion now has two Ammunition Transport Companies which have been freed up from other missions to haul ammunition. (4:2-21) Additionally, and within the division, the 120 URAL-375D vehicles are being replaced with the increased capabilities of the URAL-377 and its accompanying trailer. (4:2-21) In those instances when ammunition is being stockpiled for preparatory fires, the higher echelon has the responsibility for using its transportation to stockpile the ammunition for the lower echelon unit. (9:15) The Soviets use planning factors for allocating transportation to haul ammu-

dition. These planning factors are below. (9:15)

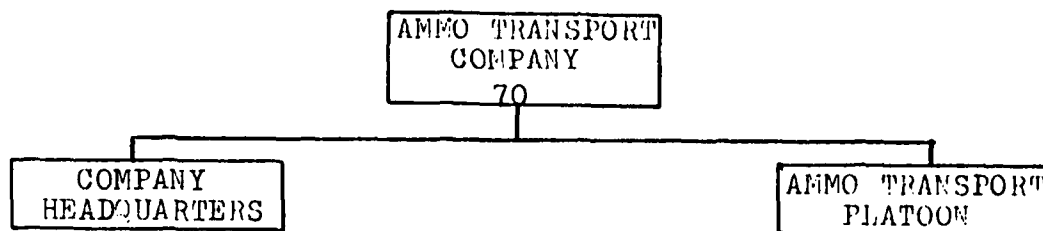
	<u>Metric Tons</u>
Unit of Fire, MRD	1,500
Carrying Capacity, MRD	3,000
Unit of Fire, TD	1,360
Carrying Capacity, TD	2,800
Amount of Ammunition Maintained in Division Supply Base	1,000

Units of fire for guns are expressed in number of rounds per weapon while the tanks, self-propelled artillery, and other mounted weapons have a unit of fire which equates to the ammunition storage capability aboard the vehicle. (9:13) Other weapons have units of fire based upon such things as characteristics of the weapon, combat experience, etc.

(9:13) In general, trucks not dedicated to hauling ammunition may, in fact, transport other supplies such as construction materials, rations, POL products, etc. (4:4-8)

The organization and principal items of equipment of the Ammunition Transport Company are at figure 8-5.

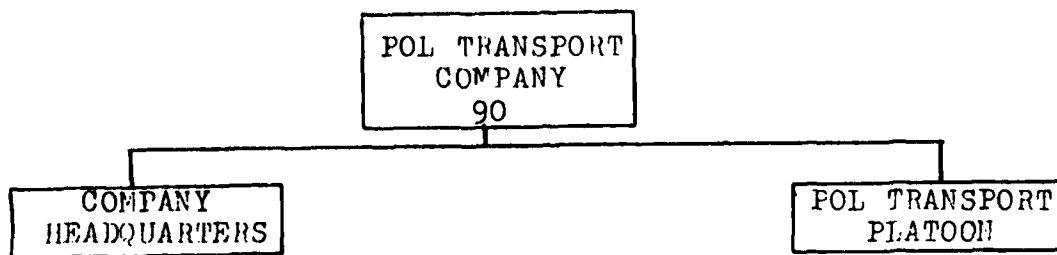
The POL Transport Company (figure 8-6) and Cargo Transport Company (figure 8-7) are also centered around platoon structures and have the missions of delivering fuels and general cargo to regiments. Additionally, and within divisions three to five days of supply stocks are maintained in an uploaded condition on wheeled vehicles for high mobility. (9:11) The MRD and TD maintain sufficient fuel reserves to refuel their units twice. (9:12) The Soviets compute fuel requirements in terms of refills



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total
ATGL, RPG-16.....	3
Truck, UAZ-69/469.....	1
Truck, Ural-375.....	60
Truck, Crane, K-61.....	1
Trailer, Cargo, 2-Axle.....	60
Radios:	
VHF, Manpack, Low-Power, R-107.....	1

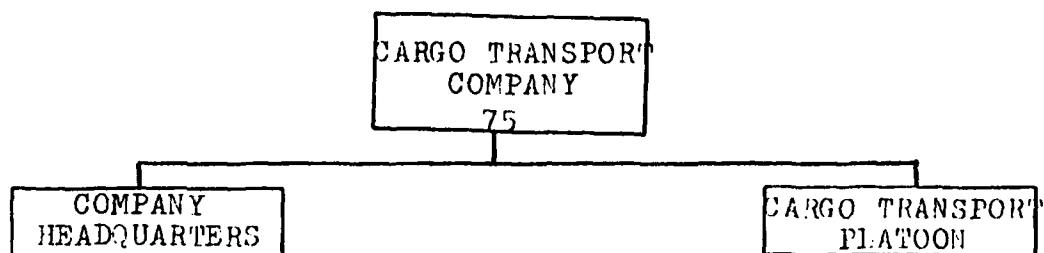
Figure 8-5. Ammo Transport Company, Motor Transport Battalion, MRD and TD. (19:4-81)



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total
ATGL, RPG-16.....	4
Truck, UAZ-69/469.....	1
Truck, POL, Ural-375 (5,200-liter).....	80
Truck, Crane, K-61.....	1
Trailer, POL, 2-Axle.....	80
Radio:	
VHF, Manpack, low-Power, R-107.....	1

Figure 8-6. POL Transport Company, Motor Transport Battalion, MRD and TD. (19:4-81)



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total
ATGL, RFG-16.....	3
Truck, UAZ-69/469.....	1
Truck, GAZ-66.....	30
Truck, ZIL-151/157.....	30
Truck, Crane, K-61.....	1
Radio:	
VHF, Manpack, Low-Power, R-107.....	1

Figure 8-7. Cargo Transport Company, Motor Transport Battalion, MRD and TD. (19:4-82)

with a refill for wheeled and tracked vehicles equating to that amount of fuel required for a 500 kilometer range.

(9:12) There are 80 URAL-375 POL trucks within each division with each truck having the capacity of 5,200 liters.

(19:4-81) The GAZ-66 and ZIL-151/157 provide the principal transportation within the Cargo Transport Company. Materials handling equipment (MHE) appears to be limited within both of these companies.

Supply

The division mobile supply base is commanded by an officer who is a subordinate to the division Chief of Rear Services. Supplies are generally maintained aboard vehicles which will be located near a road junction or along the main supply route some 25-40 kilometers from the FLOT.

(5:6-6) The division supply base will be well dispersed; interim bases may be established well forward if it is projected that tactical forces will outrun their logistics.

(9:8) Division stocks are used to replenish battalions prior to combat operations; ammunition may be pushed forward and placed in dumps on the ground. (9:20) The location of dumps and stockpiles will be influenced by combat operations. Air resupply may be used to transport high priority requirements forward if it is available. The structure of the Supply and Service Platoon is at figure 8-8.

Maintenance

Each MRD and TD has an organic Maintenance Battalion

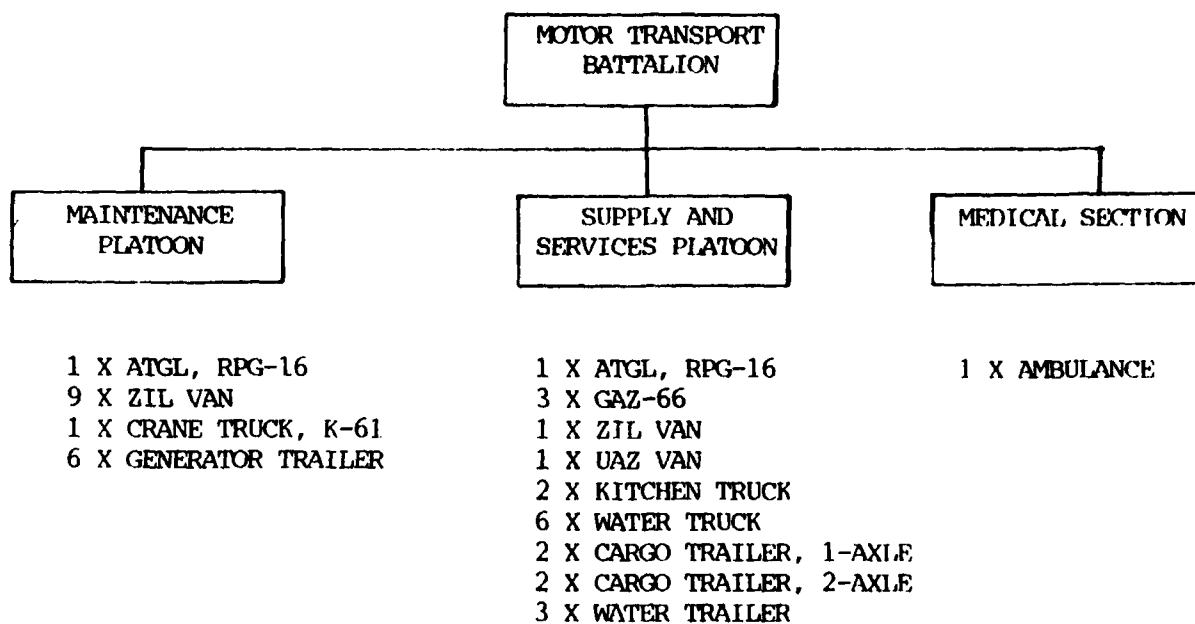


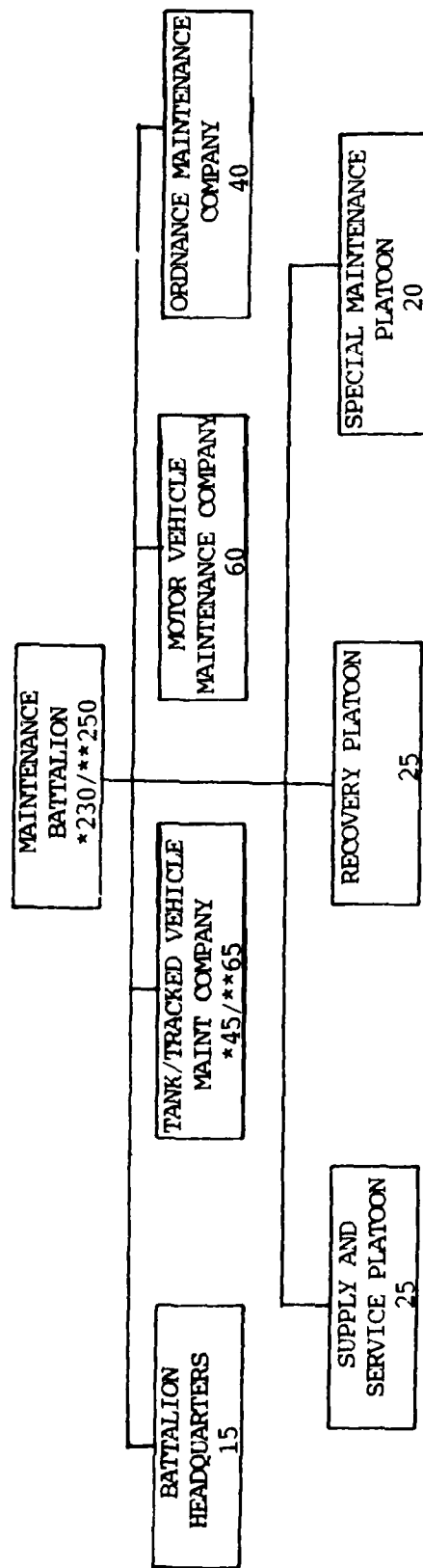
Figure 8-8. Service Support Structure, Motor Transport Battalion, MRD and TD. (19:4-82)

consisting of a Tank/Tracked Vehicle Maintenance Company, Motor Vehicle Maintenance Company, Ordnance Maintenance Company, Recovery Platoon, Special Maintenance Platoon, and a Supply and Service Platoon (figure 8-9). Repair parts are uploaded on organic vehicles. In all support capabilities, the Maintenance Battalion is the same for the MRD and TD. The Maintenance Battalion of the TD does have one more Tank/Tracked Vehicle Maintenance Platoon than the Maintenance Battalion of the MRD.

Medical

Each combat division has an organic Medical Battalion which deploys approximately 12 kilometers from the FLOT during offensive operations and approximately 20 kilometers when defensive operations are being performed.

(4:9-9) Figure 8-10 depicts the organization of the Medical Battalion whose primary mission is sorting and evacuation and is equipped to handle 400 casualties during each 24-hour period. (5:6-14) The Medical Company, which is staffed with at least three surgeons, a mouth specialist, and a therapist, provides the central core of the division medical point. A toxicologist and an epidemiologist are organic to the division's Disinfection and Decontamination Platoon. (4:9-9) The battalion and regimental collection efforts are augmented by the division's Collection and Evacuation Company, with the Evacuation Transport Section evacuating casualties from the regiment to the division.



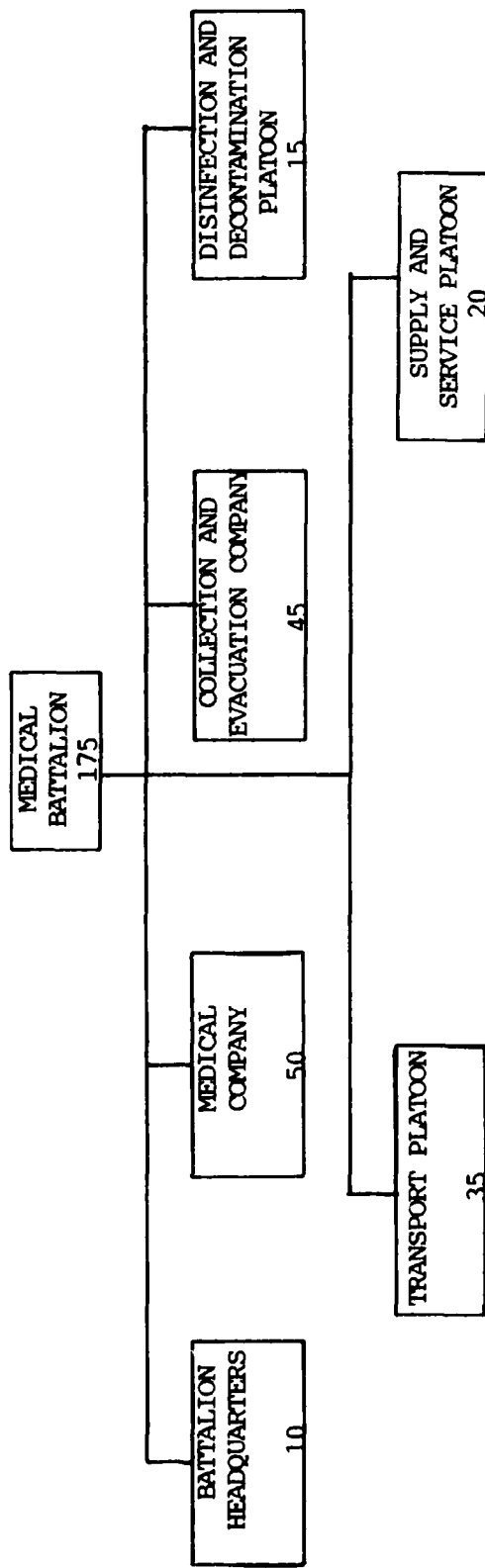
*Personnel and Equipment MRD

**Personnel and Equipment TD

PRINCIPAL ITEMS OF EQUIPMENT

Equipment	*MRD	**TD	Equipment	*MRD	**TD
ATGL, RPG-16	11	12	Tractor, Artillery, AT-S	1	1
Truck, UAZ-69/469	5	5	Motorcycle, M-72/K-750/Ural-3	3	3
Truck, GAZ-66	4	4	Armored Recovery Vehicle	5	5
Truck, ZIL Series	14	16	Trailer, Cargo, 2-Axle	13	14
Truck, Ural-375	6	6	Trailer, Generator, 2-Axle	1	1
Truck, ZIL-555	1	1	Trailer, Generator, 1-Axle	6	6
Truck, Van, GAZ	3	3	Trailer, POL, 2-Axle	4	4
Truck, Van, Ural	1	1	Trailer, Lowboy	2	2
Truck, Van, ZIL (Maintenance)	40	42	Trailer, Water	1	1
Truck, POL	4	4	Trailer, Field Kitchen	3	3
Truck, Tractor, KrAZ-214/255	2	2	Radios:		
Truck, Crane, Ural-375	3	3	HF, Vehicle Mount, Med-Power, R-130	1	1
Truck, Recovery, ZIL-157	2	2	HF/VHF, Vehicle Mount, Medium-Power	1	1
Truck, Water Tank	1	1	VHF, Manpack, Low-Power, R-107	5	5
Truck, Ambulance, UAZ-450A/452	1	1	VHF, Vehicle Mount, Med-Power, RI23	4	4
Tracked Amphibian, K-61/PTS	1	1	Warning Receiver, R-311	1	1

Figure 8-9. Maintenance Battalion, MRD and TD. (19:4-83)



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total	Equipment	Total
Truck, UAZ-69/469 . . . . .	.4	Truck, Water Tank	3
Truck, GAZ-66 . . . . .	.1	Trailer, Cargo, 2-Axle	10
Truck, ZIL Series.	21	Trailer, Generator, 2-Axle	2
Truck, Van, GAZ. . . . .	.1	Trailer, POL	2
Truck, Van, ZIL (Maintenance). . . . .	.2	Trailer, Decon, DDP.	3
Truck, Van, ZIL . . . . .	.1	Trailer, Kitchen	4
Truck, Van, Generator. . . . .	.1	Trailer, Water	1
Truck, Van, Hospital . . . . .	.9	Radios:	
Truck, POL (5,200-Liter) . . . . .	.2	HF, Manpack, Low-Power, R-104M	1
Truck, Decon, DDA-53/66. . . . .	.1	HF/VHF, Vehicle Mount, Medium-Power	1
Truck, Decon, ARS-12U/14 . . . . .	.3	VHF, Manpack, Low-Power, R-107	3
Truck, Ambulance, UAZ-450A/452	20	Warning Receiver, R-311	1

Figure 8-10. Medical Battalion, MRD and TD. (19:4-89)

(4:9-9) At division, a sorting physician determines to which hospital at army level the casualties will be sent; rotary-wing and fixed-wing aircraft are used to evacuate high-priority casualties. (4:9-12) The mission of receiving, storing, and issuing supplies for the division and subordinate medical unit is performed by the Supply and Service Platoon. (4:9-9)

Summary

Divisions are highly mobile units with combined arms structures. Each division has a Medical Battalion, Maintenance Battalion, and a Motor Transport Battalion. The Motor Transport Battalion performs both transport and supply functions with its POL Transport Company, Cargo Transport Company, two Ammunition Transport Companies and a Supply and Service Platoon.

The division supply base is mobile, uploaded, and located 25-40 kilometers from the FLOT. The division maintains 3-5 days of supply stocks on hand. The division is responsible for delivering supplies forward to subordinate regiments.

The Maintenance Battalion of the MRD and TD has a Tank/Tracked Vehicle Maintenance Company, Motor Vehicle Maintenance Company, Ordnance Maintenance Company, Recovery Platoon, Special Maintenance Platoon, and a Supply and Service Platoon. Repair parts stockages are maintained in an uploaded posture.

The Medical Battalion performs primarily a sorting and evacuation mission. Within the battalion are at least three surgeons, one mouth specialist, and one therapist. Deploying 12-20 kilometers from the FLOT, the battalion can handle approximately 400 casualties in a 24-hour period.

CHAPTER IX
REGIMENT LOGISTICS

Organization

The Motorized Rifle Regiment (MRR) is the most common maneuver element of the Soviet ground forces. It is a combined arms organization with motorized rifle, artillery, antiaircraft, tank, antitank, engineer, signal, and combat service support units (figure 9-1). The regimental level is the lowest level which is authorized this spectrum of units. The MRR with its three Motorized Rifle Battalions and one Tank Battalion has approximately 1,200 more soldiers than does the Tank Regiment (TR). (19:4-8)

The TR has three Tank Battalions with each having 31 medium tanks. (19:4-42) Artillery, antiaircraft, reconnaissance, engineer, signal, chemical, and combat service support units are also in the TR (figure 9-2). The TR does not have a motorized rifle battalion.

The combat service support organizations at the regimental level are a Supply and Service Platoon, Motor Transport Company, Maintenance Company, and a Medical Company. The organizational structure and principal items of equipment of the Supply and Service Platoon are at figure 9-3. The Motor Transport Company is composed of 70 soldiers who are distributed between the company Headquarters, two Ammunition and Cargo Platoons, a POL Platoon, and a

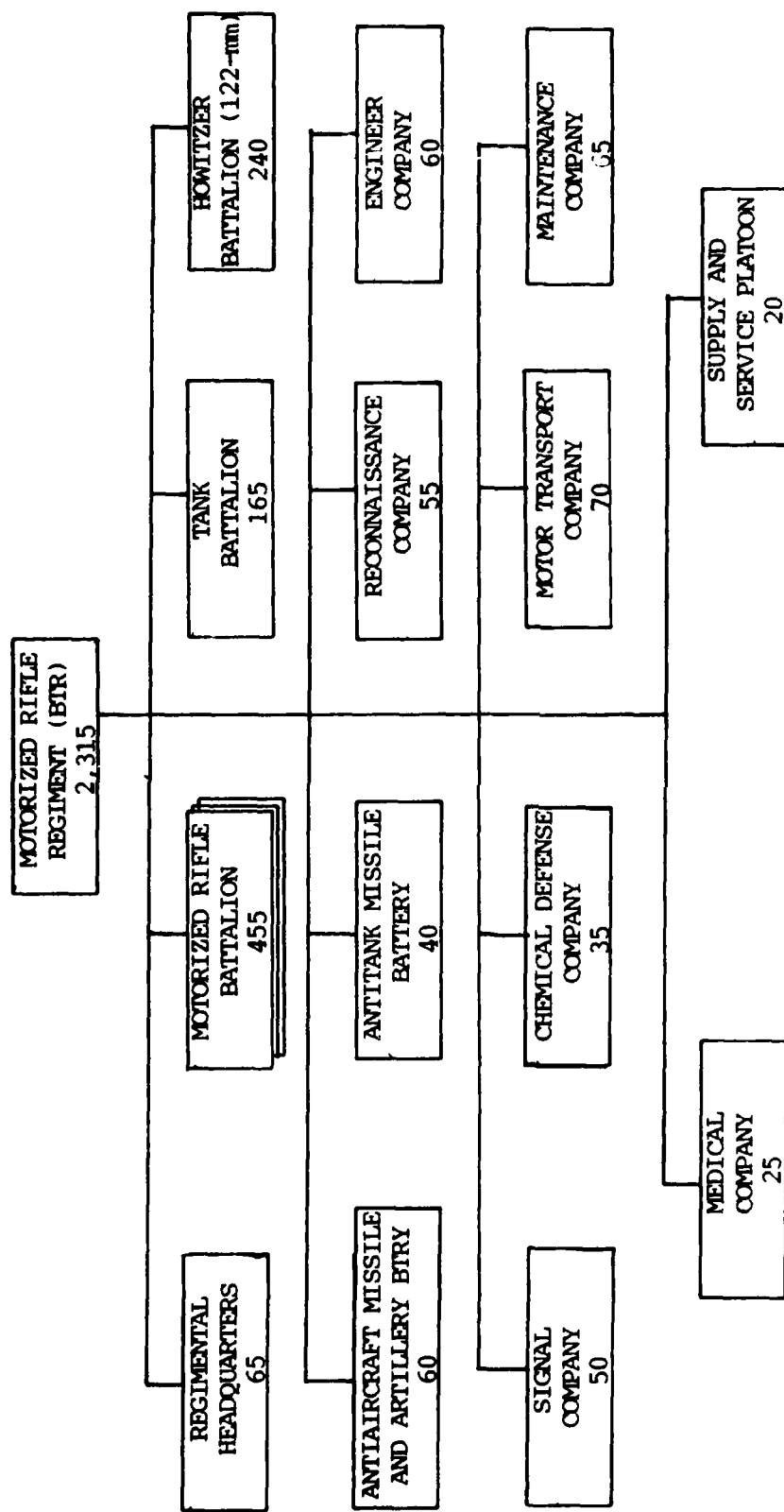


Figure 9-1. Motorized Rifle Regiment (BTR), MFD. (19:4-8)

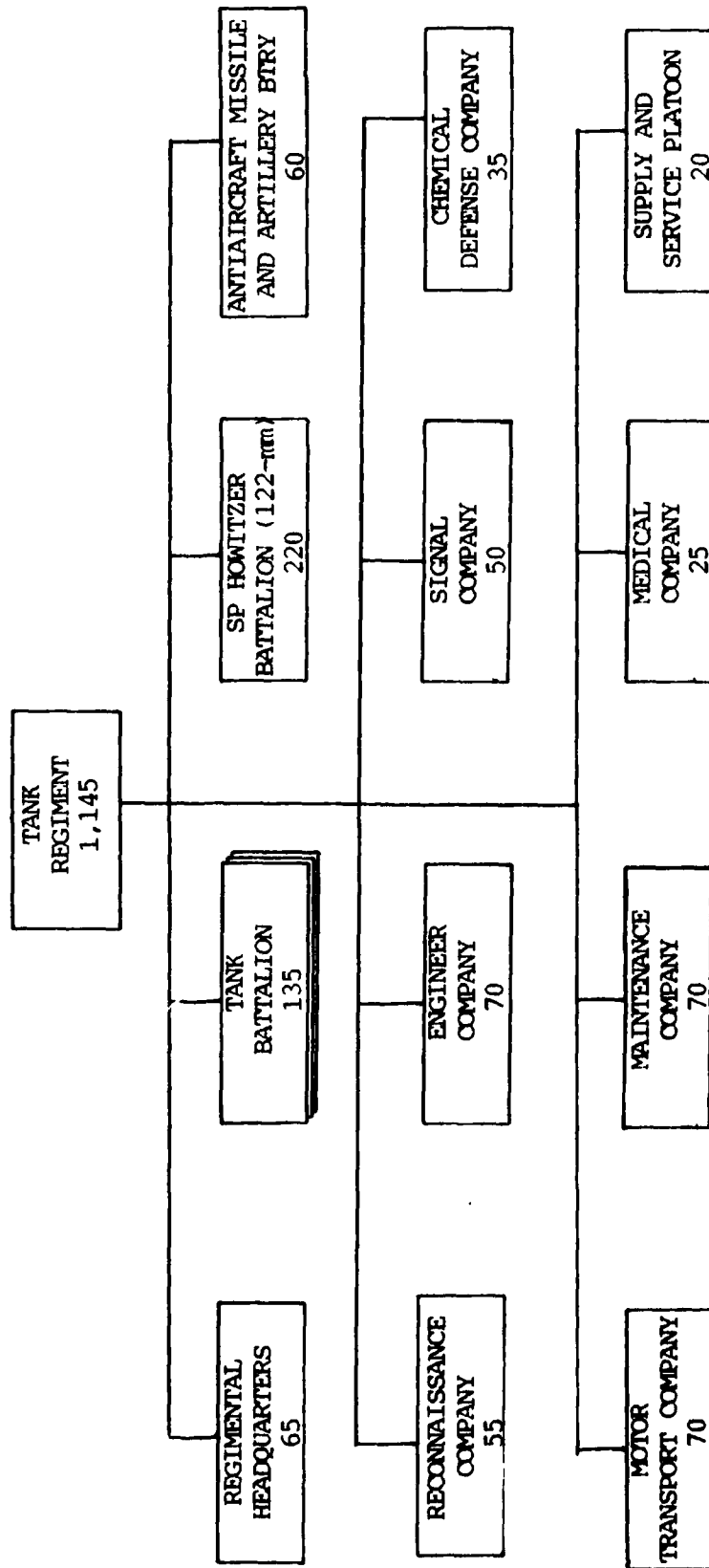
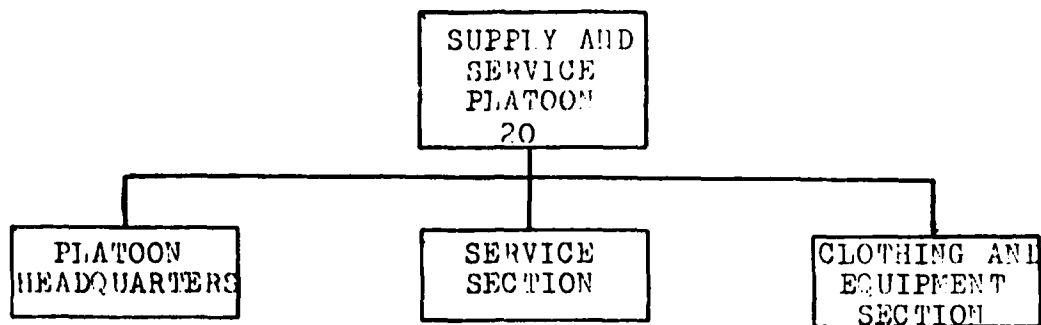


Figure 9-2. Tank Regiment (T-64/72/80), MRD. (19-4-42)



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total
Truck, GAZ-66.....	2
Truck, UAZ-69/469.....	1
Truck, Ural-375.....	5
Truck, Van, Field Kitchen, PAC-170/200.....	1
Truck, Water Tank.....	1
Trailer, Cargo, 2-Axle.....	1
Trailer, Field Kitchen.....	2
Trailer, Water.....	1
Trailer, Generator, 1-Axle.....	1

Figure 9-3. Supply and Service Platoon, Motorized Rifle and Tank Regiment, MRD and TD. (19:4-21)

Supply and Maintenance Section (figure 9-4). The Maintenance Company's structure, whose personnel and equipment varies somewhat by type regiment, is at figure 9-5.

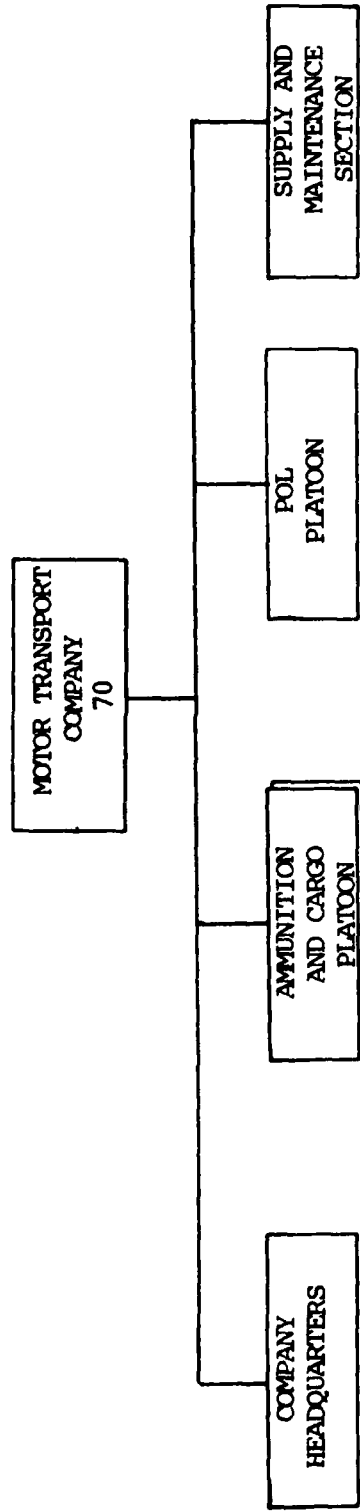
Supply

At the regimental level, a mobile supply point is established under the control and supervision of the regimental Chief of Rear Services. (15:33) Organized similarly to the division supply base, the regimental supply point is normally uploaded on organic vehicles and is normally located 10 to 30 kilometers behind the FLOT. (5:6-6) Regimental stocks are used to replenish the battalion's requirements prior to combat operations. At the regiment and above levels, the commanders of arms and chiefs of services are responsible for the procurement of arms-peculiar or service-peculiar supplies.

Transportation

The Soviet's emphasis on improving the organic ammunition transport capability has been consistently placed down at the regimental and battalion levels. (4:2-21) The significant increase in capability at regimental level (105 percent) and at battalion level (192 percent) has been primarily due to the increased number of ammunition carriers (URAL-375D) and trailers and, in some instances, URALs have replaced the ZIL-series truck. (4:2-21)

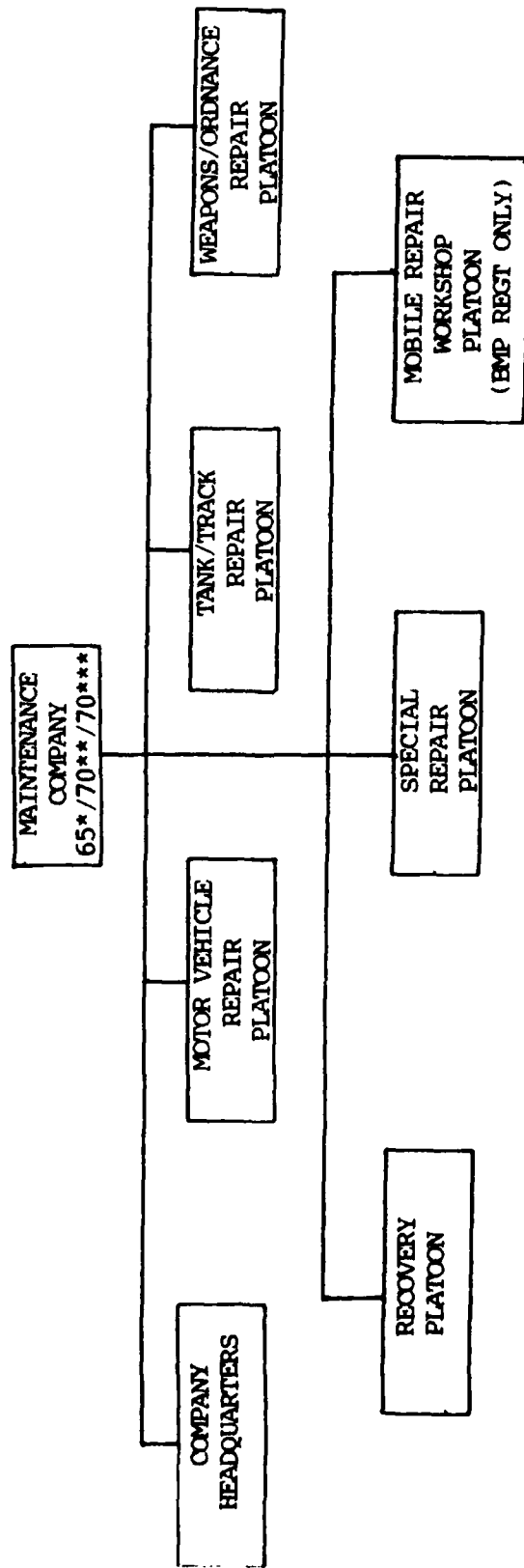
The Soviet fuel transport fleet consists of a number of different types of tank trucks with varying capac-



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total	Equipment	Total
Truck, UAZ-69/469. . . . .	.1	Truck, POL (4,000 or 5,200-Liter). . . . .	.15
Truck, GAZ-66. . . . .	.2	Trailer, Cargo, 2-Axle . . . . .	.30
Truck, ZIL-131/157 or Ural-375 . . . . .	.40	Trailer, POL . . . . .	.15
Truck, Van, ZIL (Maintenance). . . . .	.1	Radio:	
Truck, ZIL-130/131 (Water) . . . . .	.3	VHF, Manpack, Low-Power, R-107	1

Figure 9-4. Motor Transport Company, Motorized Rifle and Tank Regiment, MRD and TD. (19:4-19)



*BTR Equipped
 **BMP Equipped
 ***Tank Regiment

PRINCIPAL ITEMS OF EQUIPMENT

Equipment	*MRR(BTR)	**MRR(BMP)	***TR
ATGL, RPG-16	4	. . . . .4	. . . . .4
Truck, UAZ-69/469	1	. . . . .1	. . . . .1
Truck, ZIL	1	. . . . .1	. . . . .1
Truck, Ural-375	1	. . . . .1	. . . . .1
Truck, Van, ZIL-131 (Maint).	4	. . . . .4	. . . . .4
Truck, Van, ZIL-157 (Maint).	8	. . . . .8	. . . . .8
Armored Maint Vehicle, MTP	0	. . . . .3	. . . . .0
Armored Recovery Vehicle	3	. . . . .3	. . . . .5
Equipment	*MRR(BTR)	**MRR(BMP)	***TR
Trailer, Cargo, 2-Axle . . . . .	.6	. . . . .6	. . . . .6
Trailer, Generator, 2-Axle . . . . .	.1	. . . . .1	. . . . .1
Trailer, Generator, 1-Axle . . . . .	.2	. . . . .2	. . . . .2
Radios:			
VHF, Manpack, Low-Power, R-107. . . . .	.1	. . . . .1	. . . . .1
VHF, Vehicle Mount, Medium-Power, R-123. . . . .	.3	. . . . .6	. . . . .5

Figure 9-5. Maintenance Company. Motorized Rifle and Tank Regiment, MRD and TD. (19:4-20)

ities. (4:3-23) Specifically designed to deliver fuel to individual vehicles, these tank trucks are referred to as fuel service trucks, and they are organic to the regiment and lower units. (4:3-23)

The Soviets have developed the capability to operate several types and sizes of refueling points (PZPs). Using what they refer to as a PZP-20 and PZP-30, the Soviets can expeditiously refuel 20 and 30 vehicles respectively. (4:3-24) Under this system, 20 BMPs can be refueled simultaneously within about five minutes. With an effective PZP in operation, the time to refuel units has been cut in half. (4:3-24)

Maintenance

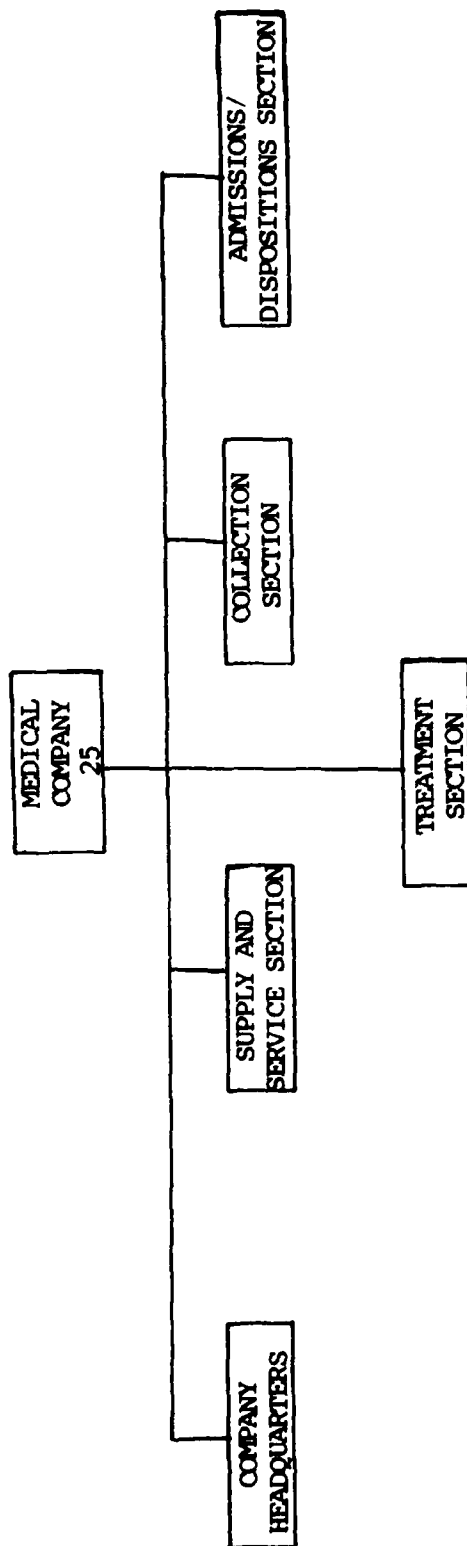
Front line units have little maintenance capability, and for the most part they are dependent upon units at higher echelons for the necessary support. At the regiment and higher levels, maintenance responsibility is commodity oriented with a staff officer at each level being responsible for his particular commodity. (5:6-9) At the regimental level, the deputy commander for technical affairs is responsible for combat and non-combat vehicles, repair parts, and motor vehicle and tank repair facilities. (9:3) The regiment's organic Maintenance Company performs routine and some medium repair and will form, as necessary, repair and evacuation groups to serve in a backup role to subordinate battalions. (5:6-12)

Medical

A medical company, which has collection, admission and disposition, and treatment as its major elements, is organic to the motorized rifle, tank, and artillery regiment of the motorized rifle division and tank division (figure 9-6). At the regimental level and at a point within 6 to 10 kilometers of the FLOT, the level of care will range from the application of bandages to minor surgery. (5:6-14) Three physicians are authorized at the regimental medical point; however, the senior physician usually does not practice as he serves as a member of the commander's staff. (4:9-5) The additional personnel at the battalion medical point includes a dentist, two medical instructors, a chief pharmacist, two fieldshers, seven orderlies, and a number of ambulance drivers. (4:9-5) Organic sustaining support includes a field kitchen staff, mechanic, and a radio. (19:4-21)

Summary

The combat service support organizations within the MRR and TR are a Supply and Service Platoon, Motor Transport Company, Maintenance Company, and a Medical Company. Under the supervision of the Chief of Rear Services, the regimental supply base is mobile, uploaded, and is normally located 10-30 kilometers behind the FLOT. At the regiment and above levels, the commanders of arms and chiefs of services are responsible for the supply of arms-peculiar



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total	Equipment	Total
Truck, Van, GAZ. . . . .	.1	Trailer, Kitchen	1
Truck, ZIL-130/131/151/157 . . . . .	.2	Trailer, Water	1
Truck, Decon, DDA-53/66. . . . .	.1	Radio:	
Truck, GAZ-66. . . . .	.1	VHF, Manpack, Low-Power, R-107	1
Truck, Ambulance, UAZ-450A/452 . . . . .	.4		

Figure 9-6. Medical Company, Motorized Rifle, Tank, and Artillery Regiment, MRD, and TD. (19:4-21)

or service-peculiar materiel.

Front line units have little maintenance capability. At the regiment and higher levels, maintenance responsibility is commodity oriented with a staff officer at each level being responsible for his particular commodity. The regiment's maintenance company performs routine and some medium repairs. Repair and evacuation groups are formed as necessary to provide backup support to the battalions of the regiment.

The Medical Company deploys from 6-10 kilometers from the FLOT where its level of care will range from the application of bandages to minor surgery. Three physicians, one dentist, two medical instructors, one chief pharmacist, two feldshers, seven orderlies, and a number of ambulance drivers are among the personnel authorized at the battalion medical point.

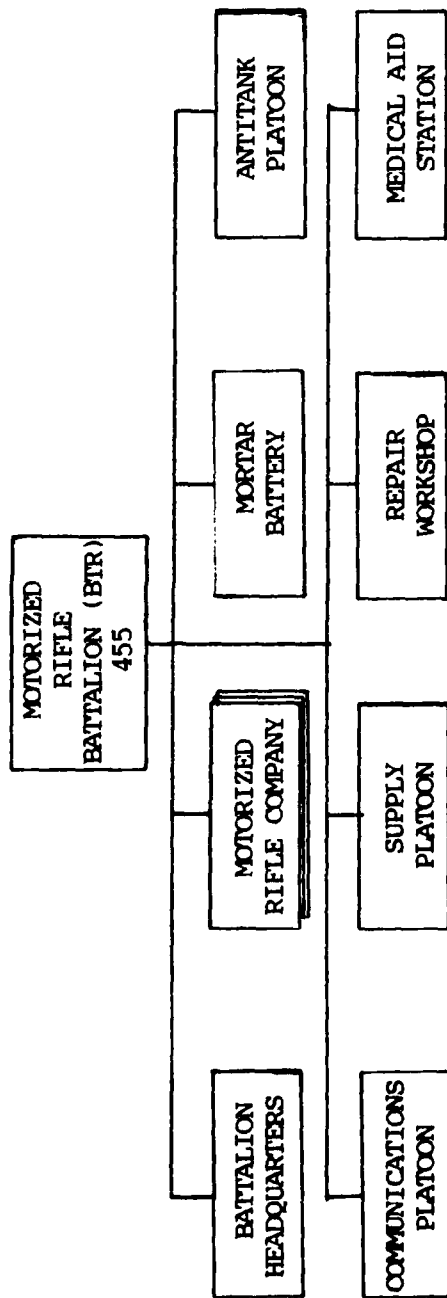
CHAPTER X
BATTALION LOGISTICS

Organization

The Tank and Motorized Rifle Battalions are the smallest, self-sustaining units in the Soviet maneuver forces. They have both organic supply and maintenance elements. The Tank and Motorized Rifle Battalions have three Tank and Motorized Rifle Companies respectively, and these companies are dependent upon their particular battalion for supply and repair and recovery support. In addition to the three Motorized Rifle Companies, the Motorized Rifle Battalion has a Battalion Headquarters, Mortar Battery, Antitank Platoon, Communications Platoon, Supply Platoon, Repair Workshop, and a Medical Aid Station (figure 10-1)

In the Motorized Rifle and Tank Battalions, all logistical functions, to include the performance and readiness of rear services personnel, are the responsibility of the battalion commander who will be assisted by the battalion's chief of staff (executive officer), supply platoon leader, deputy battalion commander for technical affairs, and the medical assistant. (2:11) No Chief of Rear Services exists at battalion level.

While the battalion commander has overall responsibility for all aspects of logistics at and below battalion



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total	Equipment	Total
120-mm Mortar, M1943 or New 120-mm Mortar. . . 6		Truck, POL (4,000 or 5,200-Liter). 2	
ATGM, Manpack Console, AT-3/SAGGER		Truck, Ambulance, UAZ-450A/452 1	
or AT-4/SPIGOT 4		Trailer, POL, 1-Axle 1	
73-mm Recoilless Gun, SPG-9. 2		Trailer, Cargo, 1-Axle 2	
ATGL, RPG-16 35		Trailer, Generator, 1-Axle 1	
SAM, SA-7/GRAIL or SA-14 Gripstock 9		Trailer, Water 1	
30-mm Automatic Grenade Launcher, AGS-17 . . 6		Trailer, Kitchen 3	
5.45-mm LMG, RPK-74. 27		Rangefinder. 1	
APC, BTR-60/70 37		Radios:	
ACV, BRUM/BTR. 3		HF, Vehicle Mount, Medium-Power, R-130 . . 2	
Truck, UAZ-69/469. 3		VHF, Portable, Very-Low-Power, R-126 . . 14	
Truck, GAZ-66. 13		VHF, Manpack, Low-Power, R-107 13	
Truck, ZIL/Ural. 4		VHF, Vehicle Mount, Medium-Power, R-123. .40	
Truck, Van, ZIL (Maintenance). 1		Warning Receiver, R-311. 1	
Truck, Van, Kitchen, PAC-170/200 1			

Figure 10-1. Motorized Rifle Battalion, Motorized Rifle Regiment (BTR), MRD. (19:4-4)

level, the chief of staff has specific responsibility for organization and location of the battalion rear, the staff supervision of the supply operation, and the coordination of activities concerning the medical aid station. (2:11)

The chief of staff is also responsible for:

(1) Monitoring the condition, capability, and location of the battalion's organic rear support units.

(2) Monitoring the condition and availability of the battalion's weapons, equipment, transportation, food, ammunition, fuel, and other materiel.

(3) Preparing proposals on organizing for support.

(4) Keeping the rear services personnel informed.

(5) Organizing support of the company for food, security, communication, ammunition and clothing.

(6) Organizing the movement of rear services.

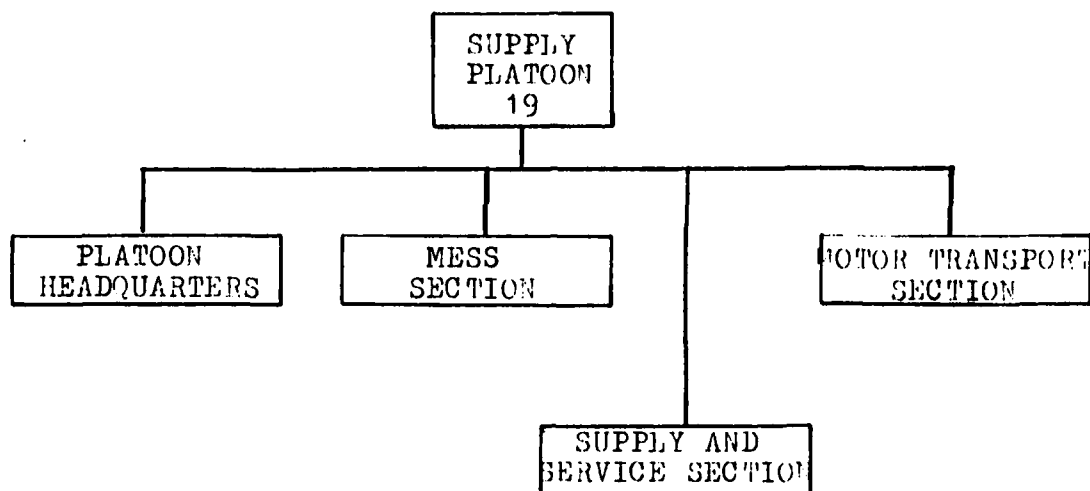
(7) Preparing and organizing the rear guard.

(8) Controlling rear services.

Within the battalion rear are the Supply Platoon, Repair Workshop, and the Medical Aid Station. The organization, to include the principal items of equipment, of the Supply Platoon is at figure 10-2.

Supply

Under the direction of the platoon leader, the Supply Platoon receives, stores, and issues all materiel delivered to the battalion. During combat, the Supply Platoon establishes an ammunition supply point, a refueling



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total
9-mm Pistol, PM.....	1
5.45-mm Assault Rifle, AK-74.....	19
Truck, GAZ-66.....	4
Truck, ZIL-130/131/151/157 or Ural-375.....	4
Truck, POL (4,000 or 5,200-Liter).....	2
Truck, Van, Field Kitchen, PAC-170/200.....	1
Trailer, POL, 1-Axle.....	1
Trailer, Cargo, 1-Axle.....	1
Trailer, Water, 1-Axle.....	1
Trailer, Field Kitchen, KP-125.....	3
Radio:	
VHF, Manpack, Low-Power, R-107.....	1

Figure 10-2. Supply Platoon, Motorized Rifle Battalion, Motorized Rifle Regiment, MRD and TD.

point, and a ration break point, with the ammunition supply point and refueling point being the highest priority since Soviet soldiers are encouraged to forage for food. (2:12) The supply platoon leader is subordinate to the battalion commander, but he receives technical guidance from the chief of staff and deputy commander for technical affairs. (15:37) The supply platoon leader is responsible for:

- (1) Monitoring the availability of fuel and ammunition.

- (2) Submitting required reports concerning the status of fuel and ammunition.

- (3) Monitoring the availability and condition of the platoon's organic equipment.

- (4) Accepting ammunition delivered to the battalion.

- (5) Maintaining records for the battalion's supply of food, fuel and ammunition. (15:36)

Required at all echelons of supply, the ammunition status reports are consolidated at each level and shipments are made to the lower echelons based on these reports. (15:41) While the supply platoon leader maintains ammunition records and submits the necessary supply reports, artillery commanders also submit ammunition status reports every 12 hours and artillery materiel status reports every 24 hours through artillery channels. (15:41)

The Supply and Service Section of the Supply Platoon is responsible for receiving, storing and issuing

supplies and equipment, with its personnel composition being primarily clerks and stevedore personnel. (2:12) The Supply and Service Section establishes the battalion supply point approximately 5 kilometers from the line of departure. (15:33) Prescribed norms are stocked for all classes of materiel, and all stocks are uploaded on the battalion's organic vehicles. (5:6-6) During operations, the battalion delivers needed supplies to its subordinate companies on motor transport vehicles and requests replenishment from regimental stocks. (15:33) Supplies are shipped to the battalion from the regimental supply point or division supply base in response to requisitions submitted by the battalion. The quantities requisitioned must be within the battalion's established norms. (15:39) While materiel released to companies is on the verbal orders of the company commanders, the materiel requested must be within prescribed norms. (15:39)

Transportation

The Motor Transport Section, Supply Platoon is responsible for receiving, storing, and issuing ammunition and fuel to subordinate companies. During offensive operations each battalion will keep its ammunition uploaded on its organic vehicles so that it can displace quickly, keeping pace with pursuit operations. (15:41) The equipment authorized within the platoon consists mostly of cargo trucks for ammunition and tankers for fuel and water. (15:36) Using

the fuel tankers and drivers, this platoon establishes a battalion refueling point with the mission of receiving, storing, and refueling vehicles during halts, while on the march, and during combat operations. (15:41) During pursuit operations, the units first use their auxillary tanks to refuel before calling for the battalion's fuel supply trucks. (5:6-8) Normally the battalion delivers to each company twice a day--once in the morning and once at the end of the day. (15:39) The companies do not establish ammunition supply points so loaded ammunition vehicles are directed by the company's first sergeant to the company's location where the ammunition is placed on the company's vehicles and tanks. (15:40) If an emergency situation arises, supplies will be issued at any time they may be required. (15:39)

Maintenance

The Repair Workshop is supervised by the deputy commander for technical affairs whose overall duties entail the organizing and controlling of maintenance, repair and salvage operations. (5:6-3) Figure 10-3 provides the organization and principal items of equipment. The deputy commander for technical affairs is also responsible for:

- (1) Training all crews and vehicle drivers in the proper preventive maintenance techniques and procedures.
- (2) Supervising all preventive maintenance and refueling operations.



PRINCIPAL ITEMS OF EQUIPMENT

Equipment	Total
Truck, Van, ZIL (Maintenance).....	1
Trailer, Generator, 1-Axle.....	1

Figure 10-3. Repair Workshop, Motorized Rifle Battalion,
Motorized Rifle Regiment, MRD and TD.

- (3) Monitoring equipment repair operations.
- (4) Monitoring the evacuation of equipment.
- (5) Ensuring repair parts are received, stored, and issued in accordance with procedures. (15:54)

The deputy commander for technical affairs is also responsible for developing and coordinating all technical (maintenance) service plans prior to the onset of operations. Part of this responsibility includes a reconnaissance of the area and the issuance of any orders relative to organization and execution of the technical service. (15:55) These orders will include:

- (1) Type of technical service to be performed at the end of that day's operation.
- (2) Organization and procedures for performing the technical service at the end of the day.
- (3) Missions and structure of the battalion's rear guard during movement operations.
- (4) Structure, mission, and location of the repair workshop.
- (5) Location of the maintenance collection point.
- (6) Organization for issuing supplies.
- (7) Location of the technical observation point (PTN). (15:55)

The order may include any number of other points which the deputy commander for technical affairs feels is relevant to the accomplishment of his technical support mission.

When conducting a march, the rear services units, under the direction of the deputy commander for technical affairs, will form the battalion rear with the medical elements being first, followed by the ammunition and fuel vehicles, food and kitchen vehicles, and finally by the vehicles of the repair shop. (15:53) A repair or repair-evacuation group, consisting of two recovery vehicles, maintenance vehicle, one or two repair shops from regiment, and a truck with fuel and repair parts, may be formed. (15:52) During long road marches, halts of approximately 30 minutes will be taken every two to three hours. (15:54) Longer halts of two to four hours may be taken during the second half of the longer marches. (15:54) Routine maintenance inspections are performed during short halts while preventive maintenance numbers one and two are performed during the longer halts. (15:54) These preventive maintenance services are outlined in Chapter 11.

Repair and maintenance crews also accompany companies during the march. (4:5-2) When accompanying companies, the repair crews may recover mired vehicles, assist drivers in minor repairs, assist in river-crossing operations, or evacuate damaged or inoperable vehicles to collection points. (4:5-2) Repairs will be performed forward if at all possible.

As the battalion reaches its assault line, the structure of the rear guard dissolves for the most part

and the PTN and repair workshop assume their support roles.

(15:56) The PTN is composed of the deputy commander for technical affairs, radio operator, combat engineers, gas-radiation monitor, and crews for technical reconnaissance.

(15:56) The PTN has a number of functions, but one of the most important is to serve as the link between the combat and combat service support operations. Further, the PTN has the missions of locating damaged vehicles, determining the reason for and extent of damage, and coordinating the repair or evacuation with the repair-evacuation group.

(15:56) With these missions to perform, it is essential that the PTN relocates frequently and that it remains from 1-1.5 kilometer behind the forward combat units. (15:57) The PTN is highly mobile and moves behind the combat units in an armored carrier which is equipped with communication equipment so that coordination and actions may be effected with the crews of damaged tanks, repair-evacuation group, supply officer, etc. (15:57)

The PTN is responsible for being abreast of the tactical situation and the location of subordinate units at all times. (15:57) If a company moves well forward of other companies and can no longer be viewed by the PTN, the forward company then must assume the responsibility for establishing their own PTN under the company's deputy commander for technical affairs. (15:57)

Once a damaged vehicle is located and assessed,

the deputy commander for technical affairs records the location and extent of damage on a map. (15:57) The tank will be repaired on the spot if the technical assessment indicates that the repair(s) can be accomplished within five hours. (15:58) If combat operations are being waged in the immediate vicinity of the damaged tank, it will be moved to a safe area and repaired. If more than five hours are required to accomplish repairs on the tank, it will be evacuated to the regimental repair facility by regimental transportation assets. If the tank exceeds the repair capability of the regiment, it will be further evacuated to the division repair facility using the division's organic transportation assets. If division does not possess the capability to repair the tank, then it will be evacuated to either army or front facilities.

Medical

The battalion medical support also falls into the category of immediate medical support, and as a result only basic first aid is provided prior to evacuation to the regimental medical point. Both personnel and equipment authorizations for the battalion medical support are austere. A physician's assistant (feldsher), corpsman, and a varying number of orderly/driver teams are the only personnel at battalion level. (4:9-4) The feldsher has a number of responsibilities which include rendering aid, monitoring the health situation within the battalion, supervising

battlefield medical operations, and providing medical assessments to the battalion chief of staff. (4:9-4) The feldsher's medical kit is basically the same as that of the company's corpsman, except that the feldsher kit has a larger number of splints and bandages. (4:9-5)

While the Soviet doctrine states that casualties should not remain at the battalion medical point (approximately 1.5 to 3.0 kilometers from the FLOT) for more than one hour, transportation is limited. (4:9-5) Organic transportation usually consists of a four-wheeled ambulance of the type UAZ-450A or UAZ-425A. (4:9-4) The LUAZ-967M, which is an amphibious vehicle, is being fielded and will probably be authorized within the battalion. (4:9-4) Since the battalion medical point locates in close proximity to the maintenance repair and evacuation groups, the majority of casualties will probably be evacuated on vehicles associated with either maintenance or supply functions. (2:13)

Summary

Tank and Motorized Rifle Battalions have organic supply and maintenance elements. The battalions have a Supply Platoon, Repair Workshop, and a Medical Aid Station within their organizational structure. The battalion commander is assisted by the chief of staff, supply platoon leader, deputy battalion commander for technical affairs, and the medical assistant. A Chief of Rear Services does not exist below regimental level.

The Supply Platoon, under the direction of the platoon leader, receives, stores, and issues all supplies delivered to the battalion. Prescribed norms are stocked for all classes of materiel, and all stocks are uploaded on the battalion's organic vehicles. Replenishment stocks are requested from regimental stocks. To facilitate timely and responsive support, the Supply Platoon establishes an ammunition supply point, refueling point, and a ration break point.

The Motor Transport Section, Supply Platoon is responsible for receiving, storing, and issuing ammunition and fuel to subordinate companies. The majority of equipment authorized is cargo trucks and fuel tankers. During offensive operations, the battalion's ammunition stays uploaded on cargo trucks to keep pace with pursuit operations.

The deputy commander for technical affairs supervises the Repair Workshop and is responsible for organizing and controlling maintenance, repair, and salvage operations. He is also responsible for training crews and drivers in proper maintenance techniques and procedures. During movement operations, he leads the technical observation point (PTN) which, among other functions, serves as the link between combat and support elements in order to identify, control, evacuate, and repair damaged or inoperable vehicles. The PTN concept is an important aspect of the Soviet's battlefield recovery, evacuation, and repair doctrine.

Basically, the battalion provides first aid treatment prior to the casualty being evacuated to the regimental medical point. A physician's assistant (feldsher), corpsman, and a number of orderly/driver teams are present. With the exception of being present in larger quantities, the medical supplies at battalion level are the same as those authorized at company level. Ambulances are limited; consequently, the majority of casualties must be evacuated by maintenance and supply vehicles operating in the area.

CHAPTER XI
COMPANY LOGISTICS

Organization

At the company level there are no rear services units; therefore, the company commander has the primary responsibility for all matters pertaining to logistics. The first sergeant, deputy commander for technical affairs, and platoon and section leaders assist the company commander in orchestrating rear services support. (15:22) The first sergeant is responsible for the accountability of all supplies to include equipment, fuel, food, weapons, and ammunition. (5:6-3) The company technical officer is responsible for supervising the weapons crews and vehicle operators in performing technical services and routine repairs. (5:6-3) The platoon and section leaders are accountable for the readiness of their personnel, equipment, weapons, and supplies. (15:23)

Maintenance

The Soviets strongly believe that operators and crews and technical servicing are integral and important to their combat readiness. The preventive maintenance technical servicing is closely monitored through a scheduling system and consists of a routine inspection and preventive maintenance number one, two and three. (15:49) The technical servicing schedule for a tank is depicted at

figure 11-1. The technical servicing, which is performed by drivers and crews with the assistance of battalion resources, is carried out as specified by the manual, during lulls in combat operations, during repair of the damaged vehicle, or upon the vehicle being evacuated to a higher repair echelon. (15:50) Technical servicing is also performed on the march during rests and halts, at the end of the march, and after each day of combat. (15:52)

In those instances where a company's vehicle, tank, etc. must undergo routine or medium repairs, the driver or crew will accompany the vehicle while it is being repaired. (15:49) If the piece of equipment requires extensive repairs, the driver or crew will not accompany the vehicle. (15:49) In peacetime, if a vehicle requires extensive repairs, it will be dropped off the unit's books, and a new vehicle will be issued. (15:49) When the unit is tactically engaged and equipment is being attrited and dropped off the unit's books and once the unit reaches a specified level of attrition, the entire unit will be replaced by a second echelon unit. (9:15)

Supply

Company supplies are held by section, platoon and crew chiefs and are maintained in tanks, cargo vehicles, armored carriers, and on troops. (5:6-6) At the company, there are two types of supplies. Expendable supplies are used in the performance of assigned missions, while emer-

<u>Maintenance</u>	<u>Frequency</u>	<u>Purpose</u>	<u>Time Allocated For Maintenance</u>
Routine Inspection	Prior to each movement	Check readiness for movement	40 minutes
Preventive Maintenance #1	After driv- ing and at least every 100-150 KMs	Prepare for future operations	4 hours
Preventive Maintenance #2	After every 1,000 KMs	Thoroughly check for proper technical condition	6-7 hours
Preventive Maintenance #3	After every 2,000KMs	Prepare for future operations	8-12 hours

Figure 11-1. Tank Technical Servicing Schedule.
(15:50)

gency reserves can only be used upon obtaining the approval of higher authority. (5:6-6)

The Soviets hope to reduce logistical requirements as much as possible so as to achieve maximum mobility and a high rate of march. To reduce logistical requirements, the Soviet soldier is taught to use captured stocks and local materials to the fullest extent possible and to cannibalize components and repair parts from vehicles damaged in combat. (9:8) Food, ammunition, fuel, weapons, and other captured materials are recorded in records at the company level and are used in upcoming operations once the approval of the superior commander has been obtained. (15:27)

Medical

At the company level, medical support starts with the individual soldier who has been trained in basic life-saving skills. Each soldier is equipped with a:

- (1) Bandage kit.
- (2) Biological and chemical decontamination kit.
- (3) First aid kit which contains an analgesic syrette, antibiotic tablets, an antiemetic, and a chemical agent antidote syrette. (4:9-4)

Treatment at the company level is in the category of immediate battlefield support; consequently, only basic first aid is provided prior to evacuation to the battalion medical point. (4:9-1) Each company has a medical corpsman along with two personnel who are selected from each platoon

to serve as stretcher bearers. (5:6-14) The corpsman and stretcher bearers locate casualties, administer first aid, carry casualties to the company aid station, and arrange for movement to the battalion aid station. (5:6-14) The corpsman's medical expertise is limited to performing such services as applying splints and field dressings, administering drugs for NBC casualties, placing the protective masks upon the disabled wounded, and providing artificial respiration. (4:9-1) The corpsman and the stretcher bearers carry basic first aid supplies with the corpsman also maintaining some special splints, straps for moving casualties, and a special protective mask for casualties with head wounds. (4:9-4) The corpsman is also responsible for selecting the locations for collection points, which are normally established along the route of advance. (4:9-1)

Summary

At the company level, the company commander is responsible for all logistical matters. He is assisted by the first sergeant, deputy commander for technical affairs, platoon and section leaders, and others. Drivers and crews perform preventive maintenance technical services on the unit's organic equipment in accordance with established schedules and the appropriate manual. The section, platoon, and crew chiefs maintain company supplies in tanks, cargo vehicles, armored vehicles, etc. Each soldier is trained in basic lifesaving skills and is equipped with

basic medical supplies. A corpsman administers first aid and coordinates the movement of casualties to the battalion aid station.

CHAPTER XII

CONCLUSIONS

For several months now, I have read numerous articles, reports, and books in order to complete this research project and to provide a document that will be useful. In the preceeding 10 chapters, I have analyzed the evolution of Soviet logistics from World War II through Afghanistan. Additionally, I have examined in detail their logistical system as it exists today from the national to the company level in the four functional areas of supply, transportation, maintenance, and medical support. I will now provide my conclusions, identifying those strengths and weaknesses which I feel the Soviets may display when sustaining maneuver warfare operations in a conventional scenario in Central Europe. However, prior to doing this, I feel that several general comments concerning Soviet logistics are appropriate.

From World War II to the early 1960s, little information is available concerning Soviet logistics. After World War II, logistics in the Soviet Union was a make-shift arrangement in which foraging and confiscation were integral components. (2:2) In the late 1960s, the Soviets began stressing the importance of logistics, and this emphasis has continued to the present time as evidenced by the numerous articles which have been published to date.

(2:3) During my research, it became very apparent that the Soviets have not only modernized their conventional forces, but that they have also streamlined and modernized their logistical procedures, organizations, and equipment. The result is a significantly improved ability to project and to sustain conventional military power. Not allowing their logistical structure to remain dormant, they have worked meticulously and with absolute resolve to correct all deficiencies identified during World War II and the nine years of war in Afghanistan. Consistently recognizing the importance of logistics at all levels, the Soviets have exhibited exceptional flexibility in changing the rear services organizations, equipment authorizations, and procedures to support their doctrine, military art, and tactics. Their structure is dynamic and is in the process of changing today in some instances. Given the limited information available at this time, I will briefly point out these ongoing changes during my conclusions regarding the organization and structure aspect of Soviet logistics.

There has been considerable discussion among the analysts of Soviet logistics concerning the Soviet's capabilities. Some have even said that the Soviet's system is austere, and that it is only marginally capable of supporting a short war. (10:2) While there is a lack of quantitative data on Soviet logistics, and while this increases the difficulty of any analysis, I can find no basis for

believing that their logistics strength is not sufficient to support combat operations. Even without additional logistical data, I believe that their logistical system complements their offensive tactics. Further, I believe that their logistics system is capable of sustaining maneuver units in an extended conventional war in Central Europe.

Organization and Structure

As I stated earlier, the Soviets are constantly evaluating their logistics system to ensure that its organization and structure are effective in providing support to maneuver units. Further, Soviet planners understand very well that the establishment of a theater of operations support structure is among the most time-consuming and difficult tasks for preparing for the conduct of theater operations. (21:74) Even though the task may be difficult and time consuming, the Soviets completely acknowledge that for maneuver units to be successful, support units must be maneuverable, mobile, and capable of providing the required support on a timely basis on a dynamic battlefield.

Several years ago, the Soviets began testing a new materiel support concept which united the disparate support elements under one commander. (22:2) The rationale for developing and testing the new materiel support concept for motorized rifle, tank, and airborne units is to be even more supportive of materiel requirements, to further facilitate the coordination and control of rear services units,

and to provide more timely and responsive combat support. (22:2) Soviet writings emphasize that the new materiel support battalions will be "multifunctional" units possessing a "sophisticated organizational structure." (22:6) While the materiel support battalion will be authorized at the division level, materiel support brigades will probably be introduced at the front and army levels and a materiel support company authorized in each motorized rifle, tank, and airborne regiment. (21:74) The commanders of the materiel support battalions and materiel support brigades will remain subordinate to the Chief of Rear Services at the respective levels. (22:5) The movement toward materiel support units is very similar to that which the United States Army took several years ago when it transitioned to the support battalion concept in mechanized infantry and armor divisions. This concept was probably tested extensively by the Soviets during Afghanistan; and once fully implemented their logistics organization and structure will be even more capable of supporting a conventional war. Figure 12-1 depicts how a materiel support battalion may be structured.

Supply

Performance indicators such as quantitative supply statistics for the national or unit levels were not available for use to assist in evaluating the overall posture of supply. However, other indicators at the national level

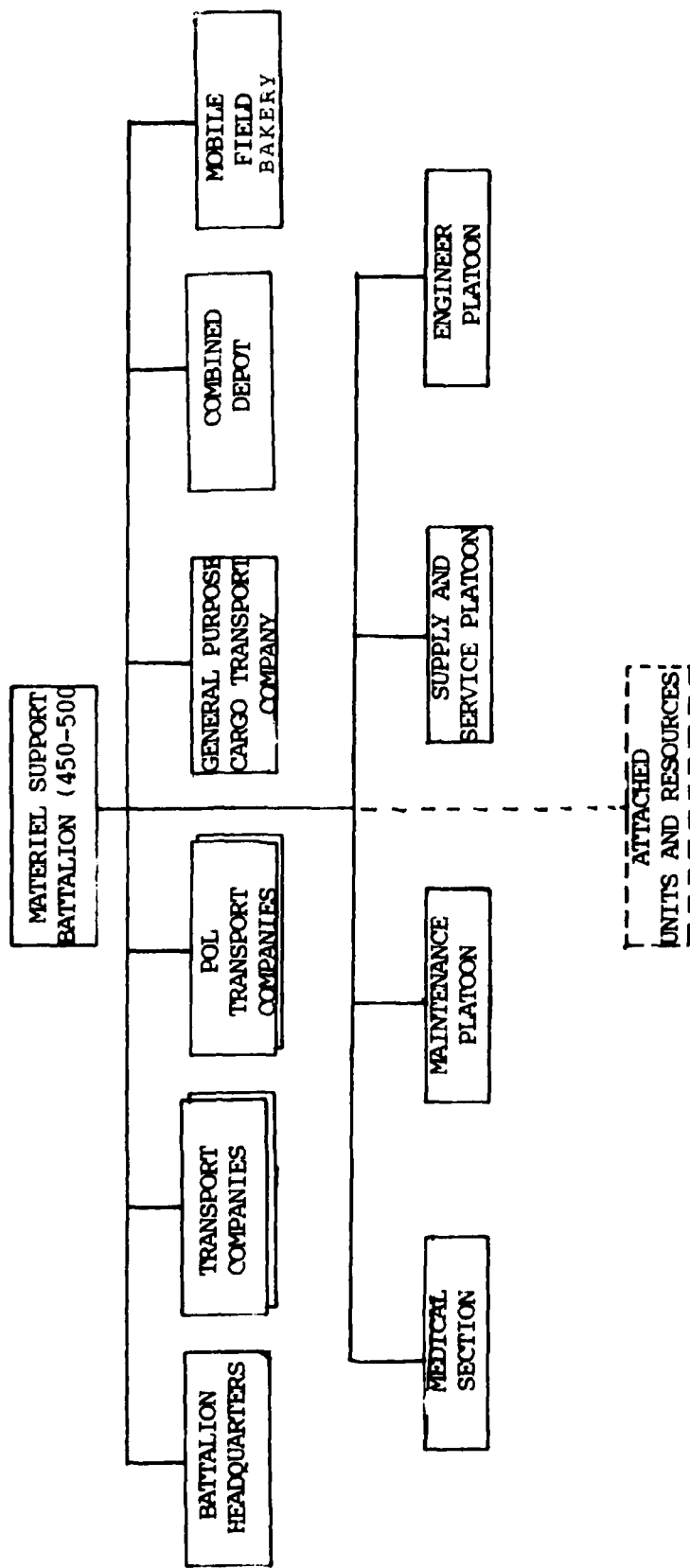


Figure 12-1. Possible Organization of Materiel Support Battalion, Tank and Motorized Rifle Division. (22:4,5)

were examined in the study and provide sufficient information to allow inferences concerning the overall posture.

The organization for supply at the national level was established during World War II under the Chief of Rear Services and has been further refined over the subsequent years. The Soviets are keenly aware of the importance of rear services, and they have consistently demonstrated the resolve to ensure that the organizational structure is correct and that the positions are staffed by competent and qualified officers at all levels. Further, they maintain an extensive structure of special troops (e.g., road building, railway building) which provides considerable capabilities in support of rear services units.

At the major operational command level, i.e., theater, front, army, the Soviet's system of supply bases within the TVDs appears to be a viable concept. These bases are supported by several modes of transportation. Stockage levels of supplies are maintained in these supply bases in anticipation of requirements by maneuver units. The higher echelon of supply is responsible for resupplying the requirements of the next lower echelon. This concept allows the commanders of combat units to concentrate on fighting the war.

Supplies at division and lower levels are uploaded on organic vehicles and are 100 percent mobile. Supplies

are maintained at prescribed stockage levels. While information is not available concerning the number of lines of supplies stocked at the different levels, the standardization of repair parts serves to reduce the number of lines stocked. A reduction in the number of lines stocked further facilitates the mobility of units.

Within my conclusions pertaining to transportation, I have discussed the problems associated with extended LOCs in Central Europe. Inherent to extended LOCs are the problems generated by restricted or untimely supply actions at the unit level. While the division level does maintain three days of supply on hand, the extended LOCs could make it very difficult to resupply the divisions. The availability of main supply routes and the ability to maintain sufficient air superiority will further impact on needed supplies reaching maneuver units. Without these supplies and munitions, rates of march, high rates of fire, and breakthrough operations will become impossible. The supplies and munitions will be routinely and continuously required in very large quantities in order to adequately support the large numbers of troops and weapon systems which would be deployed. In my opinion, the Soviets will have a real challenge to get sufficient supplies forward to win an extended conventional war in Central Europe.

Transportation

The Soviet's major deficiency during World War II

was insufficient motor transportation. (15:29) Since World War II, the Soviets have expended considerable effort and resources to expand and develop transportation capabilities at the national, operational, and tactical levels. Not only have they achieved a significant motor transport capability, other modes now present exceptional complementing capabilities.

At the end of World War II, the Soviets began to initiate action to produce the vast numbers of motor transport assets which they felt would be needed to transport the large volume of supplies and munitions to support future wars. In 1946, the Soviet truck production was 100,000 trucks per year. (15:29) With the increased priority to eliminate the shortfall experienced during World War II, the Soviet's truck production was increased to over 900,000 trucks per year by 1975. Additionally, many of the trucks produced for civilian use could be easily and quickly adapted to accomplish military missions. Today, the large number of motor transport battalions and brigades, which are among both the active and reserve forces, provide an unparalleled capacity for transporting large amounts of materiel forward in support of combat operations. There is little doubt that the motor transport assets now available play a primary role in the logistical support concept of Soviet ground forces.

Air transport is now providing additional dimen-

sions to the Soviet's logistics system. Playing a rather insignificant role during World War II, air support of logistical operations and requirements by both fixed-wing and rotary-wing aircraft is now a viable and proven concept. Still further, the Soviet civil aviation assets of Aeroflot (estimated to be over 1,600 medium and long-range aircraft) can be converted almost immediately for military use. In wartime, these aircraft will most probably be used almost immediately in a logistical role. (4:4-33) With the war in Afghanistan, the Soviets were provided the opportunity to develop and refine the concepts and procedures for using their light, medium, and heavy helicopter fleets in logistical roles. This role proved to be extremely successful as the Soviets routinely moved personnel and supplies to desired locations on a timely basis. As a result, the helicopter is now an integral part of the Soviet's logistics system.

Rail and pipeline assets provide additional logistical capabilities. Rail lines have been increased over recent years, and the Soviets have further complemented their rail operations by significantly expanding the concept of containerization. A number of terminals have been built to facilitate the handling and transshipment of these containers. These facilities, coupled with the Soviet's growing containerization program, improve the efficiency of using rail to support logistics operations. In a war-

time situation, rail would be most effective within the interior and from the country's interior to front level, and perhaps even as far forward as army level in many instances. However, there is considerable potential here for the Soviets to improve the rail network within the Soviet Union, the rail system between the Soviet Union and other Warsaw Pact countries, and the interface of this rail system with that of Western Europe.

The pipeline brigades and battalions at the front and army levels provide a significant capability toward providing the large amount of fuel that will be required to sustain continuous combat operations in Central Europe. A brigade pipeline unit possesses the capability of laying a four-inch pipeline at a rate in excess of 40 miles a day using the specialized equipment which the Soviets have developed. And while the Soviets possess this capability, I feel that any extended pipeline will present a real physical security problem for the Soviets in sustaining a war in Central Europe. The threat from NATO forces in a Central European scenario would be much more viable than the Soviets experienced in Afghanistan.

Another important aspect of transportation which must be addressed as a strength is the mobility of rear services units. In the Soviet ground forces, the rear services units are as mobile as the motorized rifle and tank units which they support. From the division to the company

level, rear services units are 100 percent mobile. (15:62) This means that supplies and munitions, which are stocked in accordance with established procedures and at the prescribed stockage levels, are uploaded and are fully mobile. These units do not have to use multiple lifts when relocating to support forward. This is an extremely important aspect since it permits uninterrupted or nondegraded logistics support during offensive operations. Consequently, maneuver units can more easily maintain the desired tempo, rate of march, etc.

From an overall transportation perspective, extended LOCs will present the Soviets with the largest problem in Central Europe. This problem existed in World War II, during the offensive phase, and then again during Afghanistan. The concept of the higher echelon delivering to the lower echelon, the principle of motor transport being the primary mode, and the unparalleled tonnages which will be needed to sustain modern combat operations are factors closely related to LOCs. Defensive counterair operations, poor driving and reading skills of Soviet motor transport soldiers, and physical security requirements against saboteurs, special operating forces, etc. are but a few of the other factors which will also impact on the Soviet's ability to support maneuver operations over extended LOCs.

Maintenance

Overall, the Soviets appear to have an effective

maintenance system. The maintenance concept of repairing forward is a good one. Their preventive maintenance program also appears to be achieving the desired results. This is evidenced by the fact that their equipment performed well during Afghanistan, and the Soviets have routinely claimed an operational readiness rate of 97-98 percent for their truck units. (15:29) During my research, I did not find a second reliable source which either validated or invalidated these high readiness rates. While those reported rates can not be totally discounted, it would be interesting to see how the computations were made. The criteria for a vehicle being reported operational as opposed to inoperable and the reporting requirements for equipment in storage are but several aspects of readiness reporting which should be evaluated before acceptance of these reported rates. From my experience, rates, while varying between fleets, would most probably range from 82 to 94 percent with the fleets with greater densities approximately the 94 percent while the lower-density fleets most often nearer to 82 percent.

There are two other facets of maintenance which must also be addressed as strong points. First, there is considerable standardization of repair parts on Soviet equipment and between Soviet equipment and the equipment of other Warsaw Pact countries. The advantages of standardization are numerous. However, the primary advantage

is that the Soviet repairer can more easily repair a piece of equipment in a shorter period of time which results in the unit being more capable of performing its mission. Obviously, standardization is even more of an advantage during wartime when battlefield cannibalization may be the only source of repair parts. Second, the Soviets maintain much of their equipment in storage while they train with the remainder. The equipment in storage is maintained in such a condition so that it is immediately capable of performing its intended mission. While one may argue that this practice may adversely impact upon training readiness, there is little doubt that this concept reduces maintenance requirements and extends the life of the equipment.

Medical

There is no doubt that today's modern battlefield would be extremely lethal with an incalculable number of casualties. With today's smart bombs, rates of fire, and high explosive capabilities, even a conventional scenario would result in massive casualties in a short period of time. Will the Soviet's medical support services be capable of providing adequate support to maneuver forces in a conventional war in Central Europe? I do not think so.

Below army level, medical support is restricted primarily to life saving treatment. Ambulance support is severely limited with supply and maintenance vehicles being conceptually identified as the means by which most

casualties would be evacuated. While helicopter evacuation will be used, I doubt the military's resolve or capability for utilizing this means of transportation to the extent which would be necessary to be significant. Lastly, I feel that the Soviets expect to and are prepared to take large numbers of casualties. This is but one of the basic differences between the Soviet Union and the United States. To an American, each life is sacred, and as such, it must be preserved. During World War II, the Soviets lost 20 million soldiers and perhaps as many as 20 million people during the purges of Stalin. With this history as a backdrop and with the existing religious and ideological differences, the Soviet's idea of what is acceptable or not acceptable concerning life-support services is unquestionably different from that of an American view. Consequently, it is difficult for me to determine or glean strengths in the Soviet's medical support services. Their organization and capabilities, especially below army level, appear to be limited, and in my opinion, their casualties would be inconceivably high during an extended war against NATO. However, it is doubtful that casualty figures alone would sway Soviet leadership to seek a political settlement.

Summary

The Soviets recognize and accept logistics as the key to being successful on today's modern battlefield. Over the recent years, they have worked to streamline

their logistical procedures and structure, to modernize their support equipment, and to ensure that their doctrine, military art, and tactics are complemented by their abilities to conduct sustainment operations. As a result of their efforts, the strengths of the Soviet logistics system are far more numerous than the vulnerabilities of the system.

While these strengths have been identified and discussed in detail in the preceeding chapters, they are briefly summarized below for quick reference.

(1) The organization and structure for logistics has been validated by World War II and the nine years of war in Afghanistan.

(2) As a result of the war in Afghanistan, the rear services units are probably the best trained logistical units in the world today.

(3) The logistics system is organized, manned, and equipped to support the Soviet's doctrine for combined arms operation.

(4) Rear services positions from the national to the unit level are occupied by highly qualified officers.

(5) The Soviets have an array of special troop units which facilitate combat service support operations.

(6) Supply concept of unit distribution is the preferred method of supporting combat operations.

(7) Authorized stockages are maintained for sup-

plies at each level in anticipation of requirements.

(8) Supply stocks at division and lower levels are uploaded on organic vehicles and are 100 percent mobile.

(9) The extensive standardization of repair parts on Soviet and Warsaw Pact vehicles is beneficial from a supply and maintenance standpoint, while concurrently providing a considerable cost savings.

(10) The Soviets have developed and maintain an extraordinary motor transport capability.

(11) Air transport, both fixed and rotary-wing, provide exceptional alternative modes to motor transport for logistics operations.

(12) Pipeline brigades and battalions at Front and army levels represent a significant capability for moving needed fuel forward.

(13) The Soviet's containerization program enhances their rail potential which continues to mature.

(14) The concept of repairing inoperable equipment forward ensures that the maximum number of weapon systems is returned to combat troops with minimum delay.

The Soviet logistics system is not without vulnerabilities. The following vulnerabilities were identified during my research.

(1) The ongoing implementation of materiel support brigades, battalions, and companies is directed toward correcting identified control and coordination problems which

exist among disparate support elements.

(2) Extended LOCs, which will be inherent to a war in Central Europe, will severely affect the timeliness of resupply actions.

(3) While the Soviets possess an unparalleled motor transport capability, the main supply routes will be limited and will be saturated by motor transport assets; consequently, resupply operations will not be responsive to frontline troops.

(4) Rail transportation will be limited primarily to the Soviet's interior due to differences which exist between the Soviet Union, Warsaw Pact countries, and the countries of Western Europe in such areas as track guages, railcar dimensions, etc.

(5) Physical security of extended LOCs presented problems for the Soviets during World War II and Afghanistan and will be even more of a problem in Central Europe against NATO forces.

(6) As presently organized, equipped, and manned, medical support services will be incapable of handling casualties on the modern battlefield. Ambulances are severely limited within the Soviet support structure. While the Soviets may be prepared to take a large number of casualties, the impact that the losses, inadequate treatment, etc. may have on the morale and discipline of Soviet and Warsaw Pact forces has yet to be determined.

While the Soviets were poorly prepared to fight World War II from a logistical standpoint, it is doubtful that logistics will be such a limiting factor in a future war in Central Europe. Over recent years, the Soviets have made significant progress in fully equipping their rear services units with modern equipment which is mobile, maneuverable, and capable of providing support operations for combat units. More new equipment continues to be placed in units. To further facilitate their command and control, the Soviets have started organizing materiel support units and these reorganizations will continue until the transition is complete. From an overall perspective, the Soviets will continue to devote the effort and resources which they feel may be necessary to sustain maneuver forces in any future war in Central Europe.

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